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Questioning Ontario's sustainable forestry act

Integrated vegetation management

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1995 WESTERN SILVICULTURE CONFERENCE ISSUE

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British Columbia treeplanter as photgraphed by Larry Deol.

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Environmental trade barriers

Dirk Brinkman

Environmental regulations can function as trade barriers. The regulation to require recycled content in paper is one such barrier. Canada simply does not consume enough paper to produce 50% recycled content in more than a small percentage of its pulp products.

This regulation translates into a requirement to buy US product, i.e., US waste paper since the States is one of the world's largest manufacturers of waste paper. Canadian pulp manufacturers need to buy it, ship it north, mix it into the pulp, and then, ship it south to sell to US consumers in those States with a mandatory recycled content law.

Unless your mill is close to US population centres, this process is by no means economical. Similar laws in Europe favour Scandinavian producers.

US companies, on the other hand, can buy Canadian Kraft and mix it with US waste paper. Since US companies can get the waste without having to ship it two ways, the US manufacturer has a competitive advantage. This results in Canadian processing jobs and profits being transferred to the US.

Other environmental regulations, such as restricting forest products which come from old-growth ecosystems or preferring wood products which come from plantations or second-growth forests, can also become trade barriers. Canada, which is still trying to "liquidate" its old growth so it can start a second growth to qualify for this kind of trade restriction, is at a disadvantage.

This disadvantage seems to meet the goals of some environmental groups, who are trying to protect critical old-growth ecosystems. These environmental interests coincide with the problems facing corporations in the southern US, who, long ago, harvested their old growth, and in some cases, have large plantations that are producing a poor quality wood product which they cannot easily market. The US situation is similar to that in Scandinavian countries, where all of the land was cleared for farming in the last century. The Scandinavians are now harvesting plantations, too.

Not surprisingly, the kind of legislation discussed above consistently finds its way onto the books in Europe (what better reason to join the European Common Market?) and the US before other, and perhaps even more obvious and critical, environmental issues in those "consumer" states are addressed.

... environmentalists have learned they can form partnerships in these consumer markets to create pressure where they feel it is appropriate ...

Environmentalists have learned they can form partnerships in these consumer markets to create pressure where they feel it is appropriate. They often do not realize the way these partnerships can create effects that were not intended. One such effect, for instance, is the energy cost of shipping waste paper from the US to Canada and back to the US, which Canadian companies now face in the pulp market competition.

Although the competitive advantage of environmental regulations makes defining "Internationally Certified Sustainable Forest Products" a slow and complex process, Green Certification is firmly demanded by American and European consumer markets. Indeed, The Body Shop has amply demonstrated the market advantage of taking an aggressive green leadership position. Clearly, there is a tremendous opportunity for innovative and disciplined entrepreneurs in the forest industry to redefine "sustainable forest management."

The concept of premium pricing Canadian forest products from sustainable, indigenous forest-ecosystems would reverse the trade barrier threat of plantation wood. It would erect a trade barrier for all countries that have trashed their indigenous ecosystems and converted them to monoculture plantations without biological diversity.

Why should we in Canada be disadvantaged if we are practicing sustainable ecosystem harvesting—which is within our grasp today.

If products coming out of sustainable ecosystem harvesting are the premium-preferred forest product in the world, then sustainable ecosystem harvesting will become affordable.

Like anything new, it takes some entrepreneurial visionaries and investor dollars from the faithful. In BC (and possibly, Alberta), the critical mass of expertise and a willing government, with a favourable policy framework, is already in place. If anything deserves research-and-development investor tax credits more than the banks, it is the forestry programs of companies who are working towards developing a sustainable-ecosystem harvesting model for Canada.

I want to acknowledge the BC government for the Forest Practices Code, and for trying to introduce sustainable ecosystem harvesting with a regulatory hammer; and the Alberta forest industry for trying to develop a voluntary compliance concept through their Forestcare Program.

The success of these initiatives is going to depend on the awareness of all players that they are part of a massive marketing exercise that will benefit us all. It will work only if the goal of sustaining the ecosystem is real. If, for any reason, we see that we have begun to compromise and do not correct our practices, the ecosystem will soon show up our failures or weaknesses as it has in the past.

The profit-driven pace of harvesting was destroying the ecosystem. Now, nurturing and protecting the ecosystem may become as much a part of the profit-driven pace of harvesting as "highballing" for production was.

Furthermore, the greatest partners that the Canadian forest industry can have are the Canadian and European environmentalists.

By working together, we can create a trade barrier that is truly in the interest of all Canadians and all species in Canada, and that, by implication, protects the world which Western societies are only now learning to live with. Our future is inextricably linked to our environment.

Let's begin to do what we have been talking about in the past decade.

Most of all, and this is particularly significant when writing in a national magazine, let's join in this goal as a *Canadian* marketing strategy, not just a *western* Canadian one. Too many provinces remain silvicultural black holes, with these ideas still in the talking stage. Similar conditions and thinking must emerge in the other provinces and ecosystems in Canada or this strategy will result in a consumer-driven, inter-provincial trade barrier.❖

Nursery endorses air pruning

SCA Forest Nursery (Sweden), the largest containerized nursery in the world, has placed an order with BCC Sylviculture Systems of Toronto for one and a half million Sideslit Trays (approximately 100 million cells) to be used for the mass production of pine and spruce forest seedlings.

After studying the various options for root pruning, including copper pruning, mechanical pruning and air pruning, SCA choose an air pruning system which involves no chemicals.

National biodiversity strategy draft released for public review

The Ottawa-based Canadian Biodiversity Working Group has released a draft of the Canadian Biodiversity Strategy.

Each province and territory has agreed to assist the National Working Group by gathering public input on the draft strategy. Following release of the final strategy, each jurisdiction will be responsible for its implementation within the context of their own plans, programs and financial capabilities.

The Canadian Biodiversity Strategy is being prepared as part of Canada's commitment to the United Nations Convention on Biodiversity, signed at the Earth Summit in Brazil in 1992. The objectives of the Convention are:

- conservation of biological diversity;
- sustainable use of biological resources; and
- fair and equitable sharing of the benefits among nations arising from increasing knowledge, technological advances, and the use of genetic resources.

BC doubles size of woodlot program

The BC government will double the woodlot license program from 500 licenses to about 1,000 over the next three years, Forests Minister Andrew Petter announced. The volume of timber under the program is also expected to double from 500,000 to one million cubic metres on Crown and private land.

Funding of $2.9 million is being provided by Forest Renewal BC, the agency created to oversee forest investments, as part of the $52 million in funding announced earlier this year.

The program will provide opportunities to small-scale foresters who are committed to practicing sustainable, community-based forestry, according to Minister Petter.

BC forest land commission established

BC has established a Forest Land Commission under the Forest Land Reserve Act passed last July. The Act created a forest land reserve to protect the province's forest lands from conversion to non-forest uses.

The reserve includes private lands classified as managed forest lands, and Crown land will be included once local and regional planning processes are completed. Lands in the reserve will be subject to BC's Forest Practices Code.

Under the legislation, the Forest Land Commission is responsible for reviewing and assessing requests from owners of private reserve lands to remove lands from the reserve.

Forests Minister Andrew Petter said that the commission's decisions are one component of the public land removal process which also involves recommendations by local government."

BC trainers association formed

In April 1994, a group of BC forestry trainers met to discuss the possibility of forming an association. As a result, the Forest Resource Trainers Association (FRTA) of BC was registered as a non-profit society in July 1994.

FRTA now has 31 members and will hold its first AGM one day prior to the WSCA conference in Vancouver on February 1, 1995.

Ontario Auditor General's report released

The Auditor General has released its 1994 audit of Ontario forest management. Although it notes that the MNR's mandates and procedures are under review, the report criticizes the province for not providing a stable funding base for forest management.

The result is that the MNR cannot plan properly and that silviculture treatments are often dictated by budget constraints and timing, not by forest management requirements or biological imperatives.

New evidence on ozone destruction

NASA scientists have released fresh evidence that man-made chlorines are chiefly responsible for eating away at the earth's protective layer of ozone over the South Pole.

Detailed data sent back to earth since 1991 by the orbiting Upper Atmosphere Research Satellite (UARS), the largest environmental monitor ever built, prove what NASA and other scientists have long suspected: the ozone hole is caused by chlorofluorocarbons, or CFCs, the widely used chlorine compound chemical.

The ozone layer acts as a shield against potentially damaging ultraviolet rays from the sun. If these rays should reach the surface of the earth at intense levels, they could cause crop damage, cancers and cataracts.

As we reported last issue of *CSM*, scientists have also warned that seedlings in Canadian forests and young fish in rivers may be particularly susceptible to damage from ozone depletion.❖

Give credit where it's due

Dear Editor:

We have just received a copy of your magazine for Fall 1994 (vol. 2, no. 4) and notice that you have reprinted an article by B. Wells and S. Zedel entitled "Alternate container types trial." While we are pleased that you find the information worth including in your magazine, we are somewhat dismayed by the fact that you did not (a) have the courtesy to inform the authors of your intention to republish their work and b) see fit to credit the source of your information (i.e., *Seed and Seedlings Extension Topics* newsletter).

While the information contained in *Seed and Seedling Extension Topics* is in the public domain, we would have hoped that *CSM* would have shown a bit more professionalism and common courtesy in reprinting information from other sources. Also, if you had discussed your intentions with the authors, you may have been able to clear up some of the concerns you had about the information they presented. For example, your editorial statement that "the Jiffy pellets were interfilled with grit or sand, which did not permit normal air pruning" is false. We do realize that *Canadian Silviculture Magazine* attempts to generate controversy at times. However, we hope that *CSM* shows a more professional face in the future with respect to publishing the work of others.

Don Summers, Nursery Extension Services, Manager

Bevin Wells, Nursery Extension Services, Operational Trials Technician

Out of context

Dear Editor:

I read with great interest your editorial discussion of clearcutting and its future (Fall 1994, pp. 6, 7 and 32). However, as a Fire Management Forester (surely a rider of one of the Four Horses), I was interested to see your discussion of Fire Hazard Reduction. Unfortunately, due to space limitations or other, Section 4 "Fire Hazard Reduction" is not included in your publication. Please send me a copy of the entire presentation, if possible, so that I may read it completely and in context.

Glenn Peterson, Fire Management Forester, Manitoba Natural Resources

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Christmas tree management and marketing

Note: Edited from a paper delivered at the 1993 national Silviculture Conference.

History

Early in this century, as the use of an evergreen at Christmas continued to grow in popularity, the forests surrounding the metropolitan areas of North America were virtually depleted of suitable trees. Consequently, tree brokers had to reach further and further North to secure their supply.

Our early exports were simply trees cut from regenerating cut-overs or pastures. After the Second World War, Scotch Pine was introduced into the mid-West for the purpose of land reclamation.

Many farmers turned their hand to Christmas tree production, and introduced top pruning or "shearing" as a cultivation technique to make the pine presentable. A population with rising affluence proved a ready market for the denser, better shaped, yet more expensive pines. The North American plantation industry was born.

As a consequence, Canadian export of wild trees to the US began to fall dramatically from the mid-1950s on. Then, in 1963, the first polyvinyl-chloride tree was introduced to the market. Now there was another major competitor. Canada had to switch much of its production from wild-cutting to the establishment of plantations or cultivated natural stands. The decline in exports was halted in the mid-70s as better trees did become available.

... throughout the 1960s and 70s, the market was chronically short of quality ...

Still, throughout the 1960s and 70s, the market was chronically short of quality. Growers were so successful that the industry was over-stimulated in the 1980s to the point where growers, selling 35 to 38 million trees, were planting 110 to 118 million trees. And all of these for a 45 to 48 million tree market. We are currently struggling through a period where there are over two trees available for every one which will be sold.

Cultivation

Most trees grown for the North American market now originate from plantations or cultivated natural stands. Very few wild trees are harvested for the US and Canadian markets, though many still are exported to the Caribbean, Mexico and South America. Cultivated natural stands predominate in Nova Scotia and the interior of British Columbia, where climatic conditions assure adequate natural regeneration to allow for sufficient stocking.

New Brunswick has a high percentage of natural stands, while in the rest of Canada and the US, plantation grown trees are the norm. There are many changes occurring in both plantations and natural stands. Growers recognize the importance of achieving appropriate companion plants for both cropping systems. Much of the work in natural stands is associated with preserving these plants associated with certain successional stages, while in plantation cultivation, the effort is to establish ground species which are fully compatible with Christmas tree cultivation.

The inter-relationship of our trees with other plants is becoming better understood and defined. Which plants act as secondary hosts for fungi? Which plants may be allelopathic and unduly inhibit natural regeneration? And which plants offer favourable habitat for beneficial insects?

Growers are automating their operations to the highest degree possible. Obviously, this is more readily possible within the plantation system, where the terrain is smooth enough to allow for tractors to work. Yet, unlike so many crops where simple production is the goal, we are selling individual works of sculpture. For instance, the few cents saved per tree by automating the shearing may often be off-set by the reduced value of the tree in the consumer's eye.

Tree improvement

I do not know of any major region of Christmas tree production which does not have a genetic improvement program. Future success will depend on the availability of planting stock which is genetically improved. Natural stands will be operated as working seed orchards.

Traits such as the timing of bud break in the spring will be relatively easy to breed for, as will be aspects such as branch angle and bud set. Potential insect and disease resistance will be more problematic, while breeding for needle and moisture retention will be an extremely interesting challenge.

Needle retention

Probably more than any other factor, needle drop or "shed" has sold artificial trees. Better technology and infrastructure will allow the industry to harvest later and place a fresher tree on the market. A better understanding of

the pesticides we utilize has allowed the industry to avoid some unfortunate needle-loss problems. Even the metered use of fertilizers has assisted the industry in the avoidance of unnecessary needle shed.

Finally, better storage conditions in the shipping yards and retail lots have been of enormous help in the protection of fresh trees. Unfortunately, there are far too many inadequate Christmas tree stands still being sold in the market. The last link in the tree keepability chain — the consumer — must become an integral aspect of tree protection.

Perhaps some of the greatest gains in needle retention will come with genetic improvement. Here, metabolic differences not readily measured from appearance will present an interesting challenge.

Industry position

The sheer numbers of trees available for market has placed much stress on tree producers everywhere. There have been numerous bankruptcies and voluntary closures within the last three years.

The economic recession has also contributed to a softening of price. The entry of warehouse retailers and chain stores as tree sellers in the last couple of years has also reduced returns for brokers, growers and retailers alike. These outlets have been able to take advantage of the sheer numbers of trees available. In 1985, such chains would not have been able to acquire the trees they needed.

The industry will realign its production with market potential. This will be done without market controls, as the industry is committed to the principle of "free enterprise." It is predicated that, by 1995, tree availability will better match market demand.

Future challenges

One of the most immediate challenges in front of the real tree industry will be the issue of tree disposal following the Christmas season. Traditionally, most trees have been picked up curbside and disposed of in landfills.

Most municipalities are not prepared to continue this practice. The industry feels it must convince municipalities to become involved with chipping and compost programs. Many jurisdictions already chip trees for mulching and trail-lining projects. Converting buried trees to such constructive uses will be important for the real tree industry.

Another challenge will be to dialogue with consumers about the environmental appropriateness of real tree use at Christmas. Many school teachers are still advising their students to consider artificial trees to avoid cutting a live tree. Unfortunately, there is little public understanding of the very sustainable quality of our crop. This we must address. Ontario has had one of the best public dialogue programs existing. More is necessary.

Many still perceive the real tree as a potential fire hazard. Yet we have proven that appropriately grown, harvested and displayed trees are virtually non-combustible. The future consumer will be able to demand and acquire much better trees. Any grower or group of growers unable to plant trees of proven quality will probably not be able to market their trees. Genetic gains, better integrated management practices and new companion plants will all be necessary for a grower to step into the future.❖

Forest practice standards in Clayoquot Sound

Scientific Panel for Sustainable Forest Practices in Clayoquot Sound

Note: This excerpt from the Panel's second report, May 1994, has been edited. The complete 70-page report can be obtained from Cortex Consultants at (604)360-1492.

Introduction

This article presents the findings of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound which reviewed forest practice standards in effect in Clayoquot Sound since January 31, 1994.

The review assessed the adequacy of over 50 current standards documents as to whether they met the Panel's Guiding Principles set out in its first report. These principles embody the Panel's belief that forest practices must not compromise ecosystem integrity, cultural values, or the options and opportunities of future generations.

Background

History:

Clayoquot Sound is a diverse environment with a rich history of settlement— first by the Nuu-Chah-Nulth people and then by non-aboriginals. Some areas of the Sound have experienced significant past disturbance; others remain virtually untouched.

This condition provides an opportunity to learn from the past and apply that knowledge to the future. The presence of highly valued, undisturbed forest ecosystems is strong incentive to improve planning and management.

Clayoquot Sound is a difficult environment in which to harvest timber because of the severity of the terrain and the many valuable forest resources that must be taken into account. Much of the area is steep, perhumid, and underlain by thin soils. Mature and old-growth forests cover roughly 70% of the land base.

Of these forests, approximately 39% fall within General Integrated Management Areas and 35% in Protected Areas as designated in the *Clayoquot Sound Land Use Decision* (1993).

Clayoquot Sound also supports major commercial and sports fisheries, world-renowned recreation activities, and sites of historic and cultural significance to the Nuu-Chah-Nulth. These conditions necessitate forest practice standards that are stringent and comprehensive.

The Panel reviewed current forest practices to determine the extent to which they were sustainable forest practices. The assesment of sustainability was based on the Panel's collective scientific expertise and the traditional ecological knowledge of the Nuu-Chah-Nulth of Clayoquot Sound. Their direct observations over their long history in Clayoquot Sound have provided useful reference and context for recent field observations. Early in the review process the Panel found that the current approach to forest management did not meet the Guiding Principles. This finding changed the Panel's task from review and amendment of current standards to the task of creating standards for a different approach to forest planning and management in Clayoquot Sound.

... the current approach to forest management does not meet the Guiding Principles ...

The new, holistic view of ecosystem management recommended by the Panel requires that forest practice standards consider ecosystem effects and cultural values, and that they be integrated.

Communities affected:

Many communities have interests in Clayoquot Sound and its forest land use and management regulations. Employment levels in the forest industry, which strongly influence the communities of Ucluelet and Port Alberni, are directly affected by forest planning decisions in Clayoquot Sound. The interests of other residents in these communities and in Tofino— including fishery and tourist operators, craftspeople, and property owners— are also affected, because forest conditions affect their livelihood and quality of life. The Nuu-Chah-Nulth people are also greatly affected by land use and resource development in their traditional territories.

The area has significant natural and cultural values, and environmental protection of Clayoquot Sound has drawn attention across the province, the country, and the world.

Regulations to improve forest land use will not serve equally well the interests of all communities. While recognizing the range of interests in Clayoquot Sound, the Panel recommends precedence be given to sustaining ecosystems and fulfilling the needs of local communities, including the Nuu-Chah-Nulth of Clayoquot Sound

The transition from a history of managing for a few resources to managing for sustainable ecosystems will affect local communities whose livelihood depends on current levels of

resource extraction. Equitably distributing the benefits and costs of resource use and environmental management will be made easier by maximizing the number of economically and socially acceptable jobs, and establishing industries that produce higher value-added products using local resources in sustainable ways. While these goals lie beyond the terms of reference of the Scientific Panel, they are nevertheless important to the success of its proposals.

General findings

In its review of current standards in Clayoquot Sound, the Scientific Panel found many documents that reflect evolving approaches towards forest practices.

Some of these standards are ecosystem-based and can contribute effectively to sustainable forest practices. Other standards, particularly those emphasizing a single resource, do not meet the Panel's Guiding Principles or do not contribute to sustainable practice.

The Panel's general findings and recommendations emphasize changes required in both the philosophy of forest planning and management, and the way that forest practice standards are created and applied.

The Panel outlines the action required to make the transition from management of forests for products to management for sustainable ecosystems.

1/ Current standards do not recognize sufficiently the physical and ecological connections among terrestrial, freshwater, and marine ecosystems. These connections are biologically and culturally important.

2/ Current standards represent the protection of environmental and cultural values as constraints on managing the timber resource. Current standards do not effectively integrate ecosystem and cultural values. Nor do they adequately address requirements for ecosystem sustainability, harmonious stewardship of all resources, and the needs of future generations.

...Clayoquot Sound is a difficult environment in which to harvest timber...

3/ Current standards do not include First Nations' values and perspectives, and do not require participation by First Nations in planning and management.

4/ There is no consistent requirement that long-term plans be developed for large areas before developing plans for smaller areas.

5/ While many standards meet their individual objectives, collectively they do not prevent loss of biodiversity, degradation of terrestrial and aquatic environments, and damage to First Nations' heritage sites and areas. Nor do they ensure restoration of ecosystems damaged by past development activity.

6/ Existing information and current requirements to collect information on forest, freshwater, marine, scenic and recreational resources, or heritage sites and areas are inadequate to meet ecosystem management objectives.

7/ Clearcutting is the implicit silvicultural system in existing standards. Most existing standards do not require justification for clearcutting or a consideration of alternatives.

8/ Current standards for Clayoquot Sound are scattered in many documents issued by different agencies in different formats, and with different authority. Some are applied as rules; others suggest possible practices. The result is conflicts in standards (e.g., fate of down wood) and inconsistencies in standards (e.g., rates of harvest, size of landscape planning units).

9/ Existing documents reflect the BC Ministry of Forests' dual mandate: to maximize the revenues from timbe extraction (proprietary), and to protect natural resources for the public good (regulatory). Because these goals are sometimes in conflict, current standards reflect differing objectives. Some standards are intended to protect non-timber resources (e.g., *British Columbia Coastal Fisheries/Forestry Guidelines*); others set operational standards to provide for the efficient extraction of timber (e.g., *Forest Road and Logging Trail Engineering Practices*).

10/ Many standards are phrased in ways which make them difficult to apply and enforce easily, fairly, and consistently.

11/ Field observations suggest that the workforce is not consistently informed of the rationale for specific standards.

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General recommendations

Based on the Panel's findings regarding current standards, its Guiding Principles, and the belief that forest practices in Clayoquot Sound must be scientifically sound, operationally achievable, measurable, enforceable, and safe, the Panel makes the following general recommendations:

1/ Manage the forests and waters of Clayoquot Sound to:
- maintain the productive capacity of the interlinked land, freshwater, estuarine, and marine ecosystems;
- maintain biodiversity of land and water ecosystems;
- include First Nations' spiritual and other values;
- maintain heritage, recreation and scenic values; and
- sustain levels of commercial resource use consistent with the preceding goals.

These goals define a strategy known as "sustainable ecosystem management" which is based on our understanding of ecosystem function, and on principles of resource sustainability and intergenerational equity (i.e., our obligation to leave undamaged forests and water for future generations). Sustainable ecosystem management requires the participation of multidisciplinary teams representing First Nations, industry, governments, and the public.

2/ Determine the levels of goods and services to be produced from Clayoquot Sound (e.g., cubic metres of wood, visitor days) through a comprehensive ecosystem assessment and planning process. Define outputs that are sustainable within limits that maintain the integrity of ecosystems.

3/ Collect resource information that supports sustainable ecosystem management. Expand inventories to include the status, abundance, and distribution of resources and values in addition to the critical factors that restrict timber harvesting and other resource-extracting operations.

4/ Develop a strategy to protect the full pattern of drainage through the landscape. Modification or disruption of subsurface drainage channels or small, non-fish-bearing streams can increase soil erosion and adversely affect fish or other components of biodiversity.

5/ Increase the level of riparian protection by increasing streamside buffer widths, including headwater and

intermittent streams, identifying and protecting unstable land areas. Water is critical to riparian areas— which are central to temperate rainforests— and protecting riparian zones underlies sustainable ecosystem management in Clayoquot Sound.

6/ Broaden the silvicultural systems used in Clayoquot Sound, beyond clearcutting. Select appropriate silvicultural systems to maintain natural landscape patterns and stand structures, and to meet a variety of management objectives other than timber production.

7/ Select harvesting methods to meet the requirements of silvicultural systems, minimize environmental impacts, and meet worker safety standards.

8/ Practice adaptive management (i.e., the rigourous combination of management, research and monitoring, so that credible information is acquired and management activities can be modified by experience) with the purpose of improving forest practices as knowledge and experience are gained. Undertake formal adaptive management in carefully selected areas to assess the effectiveness of new forest practices.

9/ Plan and manage forests to prevent ecosystem degradation. Restore ecosystems where damage occurs.

10/ Provide education and training programs to upgrade the knowledge and skills of the current workforce, and to increase the number of qualified workers on the ground. Sustainable ecosystem management is complex and requires a workforce informed of the principles involved.

11/ Develop procedures for company or worker prequalification and disqualification. Even the best forestry practices can pose considerable risk to the environment if not carried out to their intended standards.

12/ Consider worker safety when defining acceptable practices. Involve safety personnel when developing standards and new forest practices (e.g., Wildlife Tree Committee).

13/ Use consistent terminology, definitions, and inventory requirements in defining standards and practices at different levels of the planning hierarchy.

14/ Establish appropriate phase-in periods for standards requiring major changes to current practices. This will allow stakeholders time to adjust and will help to ensure compliance.

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Sustainable ecosystem management

A new approach:

The Panel's general findings on current forest practice standards in Clayoquot Sound make clear the need for a new approach to management.

Deficiencies in current standards relate primarily to the context in which decisions are made, rather than to the implementation of forest practices. For example, current standards governing road construction lead to well-constructed roads; they do not, however, guide the larger question: Given the slope position, gradient, parent material, and climate, should the road be constructed here at all? Historical approaches to forest management have focused largely on products rather than on the biological systems from which these products derive. In Clayoquot Sound, as elsewhere in BC, sustaining timber production has historically taken precedence over maintaining forest ecosystems.

The Panel believes that forests should be managed as ecosystems, rather than as potential products, and that forest practices should not put at risk the long-term health of forest ecosystems. "Sustainable ecosystem management" is characterized by resource management practices that are scientifically based, ecologically sound, and socially responsible. In Clayoquot Sound, sustainable ecosystem management also incorporates the traditional ecological knowledge and values of the Nuu-Chah-Nulth.

...forests should be managed as ecosystems, rather than as potential products...

The goal of sustainable ecosystem management is to maintain the integrity of ecosystems. Achieving this goal requires maintaining ecosystem components and ecological processes that enable the land, water, and air to sustain life, be productive, and adapt to change.

The objectives of sustainable ecosystem management include: maintaining soil formation, stability, and productivity; maintaining water quality, flow, and channel integrity; and maintaining biodiversity. Failure to maintain these processes and states may lead to failure to sustain a flow of products from the forest and failure to

protect cultural, scenic, recreation, and tourism values.

Human needs are one of many considerations in designing management activities. The needs of current generations should not supersede the needs of future ones. The protection of ecosystem components and maintenance of ecosystem processes and productivity must take precedence over all other management objectives. In the long term, managing forests as ecosystems is the best way to secure a supply of timber and other products from the forest, and to sustain British Columbia's multitude of other forest values.

Long-term, inclusive planning:

The shift from managing forests for products to managing forests as ecosystems is significant and far-reaching. To achieve sustainable ecosystem management objectives, a change in current planning processes is needed.

Planning must be long term and inclusive. It must begin at the provincial level and progress to the local level. At each level, sustaining ecosystem productivity and biodiversity must take precedence over specific product outputs.

Social, environmental, and economic dimensions of resource management must be incorporated into the planning process. Provisions must exist for determining levels of resource extraction within the limits prescribed by ecosystems.

In Clayoquot Sound, planning should consider the territorial boundaries, resource ownership, and stewardship, represented by the Nuu-Chah-Nulth term "HaHuulhi". HaHuulhi is the traditional system of land and resource management centring around ownership and stewardship of specific sites and their resources by hereditary chiefs. All the lands, waterways, shorelines and offshore sites, except for relatively remote areas far inland, fall under this system of ownership, control, and resource use.

Government, industry, and local communities must be involved effectively in resource management decision-making. The benefits and costs of resource use and environmental management must be equitably distributed. Because Clayoquot Sound is their homeland, the Nuu-Chah-Nulth must be directly involved throughout the planning process and in day-to-day management.

Only such involvement will ensure that First Nations retain cultural and spiritual benefits, and receive economic benefits from resources of their traditional territories.

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Monitoring and adaptive management:

Sustainable ecosystem management is a new endeavour and requires new approaches. We must learn quickly how well these approaches work. The best way to improve our management approaches and procedures as we gain experience and knowledge is to practice adaptive management.

Adaptive management involves three key steps or procedures. First, the management practice itself is treated as a rigorously designed, replicated experiment. Second, the outcomes of the practice are monitored and compared to anticipated or predicted outcomes. Third, a feedback procedure is developed so that practices are changed when outcomes do not match anticipated results. Each step is necessary to ensure that knowledge is gained and practices improve.

Adaptive management has been applied effectively to fisheries management but not yet to forest management. It is costly to do well, but still more costly to implement new practices without careful monitoring or mechanisms to modify the practices.

Education and training:

The transition to sustainable ecosystem management will require many levels and types of education and training. There are currently too few professional and technical personnel available to plan, conduct, and monitor activities associated with forest management in Clayoquot Sound.

Education is required to increase the knowledge base of all stakeholders. Training is required to convert that knowledge into usable skills that can be applied to forest practices. Education programs must address the needs of everyone from planners and supervisors to machine operators. These programs must clearly explain ecological processes and silviculture practices, and support the explanations with field studies. They must also explain and demonstrate rules and guidelines along with the opportunities for, constraints on, and consequences of implementing them. Finally, they must make clear the link between sustainable ecosystem management and the processes of resource extraction that occur on the land.

To keep the education process current, there must be formal feedback from field personnel, managers, and industry to government, scientists, and educators. The absence of feedback systems in the present educational process must be recognized as a serious flaw, rather than a minor issue.

...precedence should be given to sustaining ecosystems ...

Education must both upgrade the knowledge of the current workforce and increase the number of qualified workers on the ground. Programs are required to develop and modify policy over time, to monitor the effects of forest practices, to conduct research, and to practice adaptive management. These programs will require staffing by appropriate personnel. Disciplines such as archaeology and anthropology, not well integrated in forest management in the past, must be represented in these programs.

Forest planners, managers, and workers will need new skills to adapt to an interdisciplinary, team-oriented management approach. Training must include subjects such as group problem-solving, consensus-building, and conflict resolution. A team approach will also require shifts in attitudes about resources and disciplines, and how they interrelate. Training should encourage professions to share information, ideas, and decision-making among disciplines.

In summary

Four key issues in Clayoquot Sound arise from the review: 1/ inclusion of First Nations, 2/ forest planning, 3/ undeveloped watersheds, and 4/ Special Management Area boundaries.

1/ Current standards do not adequately recognize First Nations values and perspectives. The Panel recommends ways of including First Nations values and obtaining First Nations participation in the inventory, planning, and management of resources in Clayoquot Sound.

2/ Current planning procedures are inadequate for sustainable ecosystem management. The Panel recommends that planning in Clayoquot Sound be ecosystem-based and multidisciplinary; it should integrate the full spectrum of resource values. The Panel further recommends that planning be conducted at ecologically-relevant time and spatial scales.

3/ Care is required in undeveloped watersheds. The Panel recommends delaying activity in undeveloped watersheds until adequate inventories are prepared, exemplary forest practices and silvicultural systems demonstrated elsewhere can be applied, and a prequalification procedure for companies undertaking work in the area is in place.

4/ Inaccuracies in the boundaries of Special Management Areas confirm problems associated with delineating land use boundaries before conducting adequate inventories. The Panel recommends that Scenic Corridor Areas be revised using more detailed information on resources.

These changes are major, and the Panel recommends an implementation plan be established and publicized for those steps requiring significant time to implement.❖

Toward integrated forest vegetation management

Robert G. Wagner

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Unlike the clearly visible damage produced by most insect and disease pests, damage to desired trees from surrounding vegetation is not often apparent. It results primarily in lost stand development potential.

Vegetation management used throughout the life of a stand not only reduces this damage, but provides one of the best opportunities to influence the composition, growth, and form of developing stands. Many regeneration efforts in North American forests would fail or be severely delayed without it.

Yet efforts to improve vegetation management have developed at a slower pace than insect pest management. Over 30 years ago, integrated pest management (IPM) was developed to advance insect pest management in both forestry and agriculture. Only recently has a rationale and approach for integrated vegetation management been considered. Early efforts have begun for agriculture. Despite the contributions of agricultural weed management to forest vegetation management, differences in management objectives and ecosystem characteristics between agriculture and forestry will require unique approaches to integrated forest vegetation management.

Integrated forest vegetation management (IFVM) is defined here as managing the course and rate of forest vegetation succession to achieve silvicultural objectives by integrating knowledge of plant ecology with a wide variety of complementary methods that are ecosystem based, economical, and socially acceptable. Achieving IFVM will require that forest researchers and managers adopt new perspectives, conduct needed research and technology development, and incorporate resulting methods and technologies into practice.

New perspectives

North American forestry is changing rapidly. Efforts to incorporate "sustainable development" concepts into US and Canadian forestry, and the development of "new forestry" in the US Pacific Northwest are signs of the shifting paradigm. The USDA Forest Service's recent adoption of the "ecosystem management" concept is an effort to combine ecological principles, sustainability, and land stewardship ethics. This change in forestry represents movement from an ecological stage to a social stage: managing the forest based on what the public finds "socially acceptable". Defining more clearly what forest managers must sustain and an examination of our forest land ethic are central to this debate. How the current debate will affect forestry practice over the next decade or more is unclear. Forest managers who want to keep pace with the inevitable changes must critically examine traditional objectives, strategies, tactics, and methods of evaluation for forest vegetation management.

...the public also associates the need for herbicide use with what it perceives to be other undesirable forestry practices...

Reliance on a single method:

As with agriculture, forestry has come to rely on synthetic herbicides for vegetation management. Yet public controversy over chemicals in the forest during the past two decades has brought intense scrutiny of this practice.

Forest policy or litigation on public forest lands in the Pacific Coast states, Great Lake states, and five Canadian provinces has severely restricted their use. Such restrictions have generally occurred swiftly and with limited attention to scientific evidence or forest management concerns. Because herbicides are effective and relatively inexpensive, forest researchers and managers have generally avoided investigating alternatives that are perceived to be less effective and more expensive.

Even in jurisdictions where herbicide use has been restricted, efforts to develop alternative strategies have been limited.

Ironically, development of alternative approaches may increase public acceptance of herbicide technology. For example, the public may accept judicious use of herbicides if the overall vegetation management program involves a wide array of methods that reduce dependence on herbicides alone.

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Public perceptions of risk:

Forestry professionals have tended to discount opposition to herbicides because they believed it was confined to only a small segment of the public. Over the past two decades, however, minority views on many environmental issues have become dominant public beliefs.

A recent Environics survey of 2,500 Canadians indicated that 71% oppose the use of chemicals in the forest. Most of those surveyed believe pesticides are harmful to wildlife and people living in or near the forest, and that application of chemicals, if necessary, should be by ground rather than by air.

... future policies for forest vegetation management are likely to be based to a large degree on public perceptions of risk ...

The public also associates the need for herbicide use with what it perceives to be other undesirable forestry practices, such as clearcutting.

Groundwater contamination with pesticides in the Midwest, development of herbicide-resistant weeds, and concerns over pesticide residues on foods have reinforced public perceptions about problems with herbicide use in forestry. Public beliefs that forested landscapes are among the only remaining unspoiled ecosystems further exacerbates this perspective. Acknowledgment that public opposition to herbicides has become a dominant view will be a prerequisite to developing alternative approaches.

Forest researchers and managers support herbicide use based on toxicology and the environmental fate of herbicides. They have not generally accepted public perceptions of risk because the conclusions contradict those from quantitative risk assessments. Public perceptions of risk, however, are based on a wider variety of criteria than those of experts; and are associated with a desire to regulate risky activities. Some researchers suggest that controversy over herbicide use in forestry is political, rather than scientific. Indeed, benefit-risk analyses by the public involves perceptions, values, traditions, and social norms. However, it is important to consider both scientific and social factors when addressing environmental concerns in forestry.

If the past provides any indication, future policies for forest vegetation management are likely to be based to a large degree on public perceptions of risk. Recognizing differences in how science professionals and the public perceive risk is central to successfully communicating with the public about actual risk, as well as assessing what practices are likely to be socially acceptable.

IFVM research and technology

Several areas of research and technology development are needed to achieve IFVM:

Alternatives to herbicides:

Tools to manipulate forest vegetation will continue to be vital to forest managers, especially if herbicides are restricted. Therefore, research should emphasize development of effective, economical, environmentally sound, and socially acceptable alternatives to herbicide use.

Potential alternatives include prescribed fire, mechanical equipment, manual cutting, mulches, grazing animals, cover crops, and biological methods. Limited research efforts to develop these alternatives have occurred in most regions of North America.

Efforts to develop alternatives to herbicides need to adequately address potential limitations of these approaches including: negative ecosystem effects, hazard to forest workers, regulatory constraints, high

costs, narrow range of plant species controlled, and public rejection. Similar challenges have been experienced in developing pesticide alternatives in agriculture. Complete abandonment of herbicides in forestry is probably no more feasible than for agriculture. Social acceptability of alternatives is likely to be based on perceived availability, desirability, equity, and feasibility. Achieving IFVM will require that a wide variety of tools be available, and that they be used in an integrated and complementary manner.

Plant autecology:

An important part of the development of integrated management for insect pests was understanding the biology of the pest. Knowledge of the insect's lifecycle, behaviour, feeding requirements, predators, and environmental limitations is an integral part of an IPM strategy.

The autecology or life-history characteristics of forest plants is the analog to pest biology. The most important autecological characteristics to understand for successfully managing forest plants include habitat requirements, modes of reproduction, growth habit, phenology, and response to disturbance.

Understanding how the type, intensity, timing, and frequency of silvicultural activities interact with these autecological characteristics is central to moving forest succession in a desired direction. Conventional silvicultural activities such as harvesting and site preparation also should minimize the survival and invasion of undesirable forest plants, thus placing vegetation management in a "prevention loop" rather than a "removal loop".

Limited research has been done in the area of forest plant autecology from a vegetation management perspective. Population modeling of major plant species can provide the basis to develop and predict the outcome of IFVM strategies.

Predicting effects of competition:

Another foundation of IPM is predicting how an insect pest population will grow and what resulting yield losses are likely. Similarly, being able to predict how associated vegetation will grow and compete with desired tree species is vital to IFVM.

As many alternatives to herbicides will likely be more expensive, it will be essential to identify which site and vegetation conditions will benefit most from control measures. In addition, forest supervisors, policymakers, and the public will demand greater quantitative justification for vegetation management prescriptions.

Although research has shown that substantial growth losses can occur in young forests without vegetation control, forest managers have few quantitative tools to assess the need for treatment on specific sites. Developing such tools is vital to ensure that vegetation treatments are prescribed only when the resulting value of long-term changes in stand development can be economically justified and balanced with other ecosystem concerns.

Thus far, competition indices have been the primary approach for identifying a threshold vegetation density, above which vegetation control treatments should be prescribed. There have, however, been substantial limitations to the approaches used to develop these indices. In addition, the type of threshold (e.g., competition, economic, statistical, predictive) most appropriate needs to be defined to advance this effort.

Computer models that predict the dynamics between desired tree species and associated vegetation will become the basis of threshold assessment. These models must be able to project long-term stand development under a range of potential management scenarios. There are currently only limited efforts to develop such models in North America.

Vegetation survey data regularly collected from forest sites should provide input for such models. But because of the difficulty and expense of collecting data from large, remote areas

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using traditional field-plot methods, future vegetation surveys will need to use aircraft- or satellite-based approaches.

Technologies for vegetation surveys are currently under development in other scientific disciplines and have yet to be applied to forest vegetation management in any significant way. Increased application of this technology on rangelands and on young forest vegetation can produce rapid technological advances.

Geographic information systems (GIS) will likely be used to link vegetation survey data with models that can project long-term stand dynamics. Since vegetation survey technology and computer models are now generally developed separately, we must ensure that inputs for the models are compatible with the kind of data collected from aircraft or satellites.

Ecosystem effects:

Forest vegetation management has traditionally focused almost exclusively on enhancing the survival and growth of desired tree species. When vegetation is manipulated to alter trajectories of forest succession, a wide range of ecosystem functions can be affected. Because such effects have been considered secondary, research in this area has been limited.

...the relatively low price of herbicide applications resulted from past annual budget commitments, and in some cases by industry and government subsidies...

The development of ecosystem management, however, is greatly increasing concern for these secondary effects. Prescribing vegetation treatments based on fuller consideration of the effects on other ecosystem components will become more important as IFVM strategies are adopted.

Effects of alternative vegetation management options on biodiversity, wildlife populations and habitat, landscapes, soil processes and long-term site productivity, aquatic systems, and esthetics are likely to be of greatest concern.

Traditional reductionist approaches will need to be expanded to include larger-scale, whole-system examinations involving researchers from a wide range of disciplines. IFVM will thus become one part of an ecosystem management plan.

Social interface:

Since IFVM is defined here as the use of methods that are "socially acceptable", specific definitions and objective measures of public acceptability must accompany development of new methods or approaches.

Needs for social science research in this area include surveying social values, perceptions, and beliefs about forest vegetation management; identifying the relationship between vegetation management objectives and methods, and current social values; identifying which societal beliefs about forest vegetation management are value based, and which are based simply on a lack of technical information; and designing methods for public involvement, consensus, and conflict resolution on vegetation management issues.

Understanding gained from such research can be used as a guide for developing alternative practices, educating forest managers about public views, developing forest policy, and enhancing communication between forest managers and the public.

Implementing IFVM

Although the research described above is needed to move toward IFVM, the information and technology generated from these efforts will need to be available in a form that managers and technicians can readily apply. For example, if researchers discover that a harmful plant species regenerates from buried seed at certain times after specific types of disturbance, practical silvicultural recommendations (e.g., required type and timing of soil disturbance) and required technology (e.g., mechanical scarifier with a special blade) must be developed to make use of the research.

Once practical information and technologies are available, forest managers and technicians need to be aware of and accept these approaches as part of their normal management practices. A strong extension program can transfer pertinent information and technology to those professionals who will use it. Extension efforts should include technology transfer specialists who work directly with scientists to develop practical recommendations and technologies from the research.

The information and technology could be transferred regularly to forest managers and technicians through workshops, demonstration areas, publications, videotapes, and other means of communication.

Silviculture contractors generally carry out vegetation management prescriptions on public and private lands. These contractors are thus likely to be the ones implementing new methods developed for IFVM. Therefore, they will need the proper equipment and training.

New technology and skills can be introduced to these contractors through the same extension mechanisms used to transfer information to forest managers and technicians.

IFVM implementation also will depend on government and industrial funding commitment. Such funding encourages silviculture contractors to invest in equipment and acquire the skills necessary to deliver new techniques. There is a strong link, therefore, between funding commitment and the availability of skilled contractors. If sufficient budget commitments are not made, promising new techniques may not survive the early development phase, which often involves higher prices and trial-and-error.

Since government and industry generally control the funds for vegetation management, they will determine the rate at which IFVM approaches are implemented. The price of many alternatives will not be reduced to a more competitive level without a relatively stable market.

If IFVM requires that a wide array of techniques be available, then industry and government organizations will need to regularly dedicate portions of their vegetation management budgets to create a market for these alternatives. Regulations and incentives can be used to motivate land managers to dedicate portions of their budget to vegetation management alternatives. Incentives are likely to provide the most effective means to encourage changes in management practice.

One potential incentive is to subsidize the price difference between traditional approaches and more expensive alternatives. Such a subsidy would only be put in place long enough for contractors to create a competitive marketplace that reduces the price of effective alternatives. It should be noted that the relatively low price of herbicide applications today resulted from past annual budget commitments, and in some cases, subsidies by industry and government organizations.

Conclusions

Forest vegetation management will continue to be a vital element of forest protection in North America. As a forestry discipline, vegetation management was one of the first to have its core technologies and objectives questioned by the social forces that initiated current whirlwind changes. The challenge is to move this discipline forward in a manner that will allow us to effectively meet forest management objectives. Critically questioning the approaches we have adopted and developing new ones will provide the greatest promise for meeting this challenge.❖

Robert G. Wagner is program leader for the Vegetation Management Alternatives Program at the Ontario Forest Research Institute, Ontario Ministry of Natural Resources.

Some expert advice on bear encounters

James Gary Shelton

Note: Excerpted from James Gary Shelton's new book, Bear Encounter Survival Guide.

Bear aggressive behaviour is very complex and difficult to understand, and much of it is still unknown. But what is known about both black bear and grizzly bear behaviour sheds considerable light on what occurs during a bear encounter.

Grizzly bears

Grizzly bears evolved over a long period of time in open habitat conditions during the Pleistocene Epoch, with many extremely dangerous megafauna predators. Grizzlies developed a defensive-aggressive behavioural mode of challenging intruders by ferocious bluffing, and if necessary, making contact with and immobilizing the threat, then quickly retreating. Sow grizzlies usually defend their young by having them run in the opposite direction of the threat (if it can be clearly located). She then exhibits bluffing displays toward the threat, and either makes contact with the intruder or runs after the cubs. Whether a grizzly makes contact in this situation depends on several factors:

1/ The aggressiveness of the particular bear.

2/ What events have just preceded the encounter.

3/ The distance to the threat, and in some cases of a sow with cubs, whether or not the distance between the threat and the cubs is being increased.

In the present evolutionary period, grizzlies do not have any formidable competitive predators that threaten their safety, except humans. But for eons they co-existed and inter-reacted with a host of dangerous animals, with no way of escaping from them except through ferocious behaviour. Even though the megafauna predators of the past who influenced grizzly bear behaviour have become extinct in the last 13,000 years, grizzly behavioural patterns will continue for thousands of years into the future.

Grizzlies do not have the ability to determine whether or not you actually pose a threat to them. Their aggressive-defensive behaviour does not work that way— if it did, they would have probably suffered extinction a long time ago. A behavioural system that employs a quick aggressive response to any intrusion, has given grizzlies a survival edge against other competitive species.

... black bear attacks are the most dangerous and the majority of victims are people working in the field...

Occasional variations on this grizzly bear open-habitat aggressive-defensive behaviour can occur and usually lead to very dangerous circumstances.

Black bears

Black bears developed a behavioural pattern of living in forested areas and using trees for defense early in their evolutionary development. In general, black bears are less aggressive than grizzlies, but equally dangerous because of their more predatory nature towards people. They will make the same bluffing displays as grizzlies when threatened, but are less likely to make contact.

Sows usually defend their cubs by sending them up a tree, then standing at the base of the tree making bluffing displays toward the threat. If a single bear or a sow cannot dissuade a threat by bluffing, it will sometimes make contact. More often, it will also go up a tree.

Predacious black bear behaviour is different. Usually, a predacious bear does not show any anger or bluffing. It follows its prey in a stalking mode— maybe circling and moving closer. If the bear decides its prey is "takeable", the bear charges, takes down its prey, then kills and eats it.

Black bears are more difficult to read during encounters since they are not as "upfront" as grizzlies are in letting humans know their intentions. They can be very unpredictable, so be alert for signs of predacious behaviour.

An important statistical point about predacious attacks by both species is that most people killed by a predatory grizzly are people camping in a park at night. Predacious black bear attacks are by far the most dangerous type of attack in BC and the majority of victims are people who are working in the field during the day.

NB: This excerpt is from the chapter "Bear Aggressive Behaviour" which offers a comprehensive analysis of various types of bear aggressive behaviour.❖

***Bear Encounter Survival Guide* is available at book stores or through mail order. Send $23 ($19.95, plus $3.05 shipping and handling) to Pogany Productions, Box 355, Hagensborg, BC V0T 1H0. For more information, call (604) 982-2916.**

Canadians must rise to sustainable challenge

Susan Tanner, Executive Director, Friends of the Earth, Canada

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Where are we on the road to sustainability? Traumatized, in bed, at a roadside inn, with the covers over our heads. When we sleep, our nightmares are of Economy, Ecology and Equity fighting each other unto death.

We started out with great idealism, gathered up the things we thought we would need along the way. But it turned out to be a much longer journey than expected, with lots of delays for road construction, detours and dead ends.

Despite the best efforts of the Projet de société, Canada is not yet moving forward on a national sustainability strategy. Internationally, the Commission for Sustainable Development is getting mired in UN 'diplotalk' and red tape.

Transnational corporations control more resources than many nation states without any accountability to the public good. There is no world government to enforce international environmental regulation. The numbers of refugees are on the increase. Social and environmental programs around the world, including Canada, are falling victim to 'structural readjustment'.

We are not coming to terms with the major factors leading us away from sustainability. Apparently, we didn't have what we needed for the trip. Some of the things we packed were:

1/ Historically, Canadians have expected their government to provide certain basic social services. Canadian pioneers knew that their survival meant reaching out, pooling resources and supporting each other. Canadians recognize that we cannot have freedom without the limits of law, cannot have rights without responsibilities. We do not live by the US dictum of 'survival of the fittest,' but by a more gentle standard of modified 'unsocialism', a caring about the social fabric of the country and its less advantaged citizens.

2/ Agreement on the need to develop a green industry and to reduce our dependence on natural resources. One thing that both the private and public interest groups in Canada agree on is the need to evolve our economy away from dependence on natural resources and toward green technologies. Canada has a marvellous opportunity to take a leadership role in the development of sustainable business practices.

3/ Visionary, committed NGO community and mechanism to fund the consensus-building process among different public interest sectors. The government has supported voluntary public interest groups. At the Earth Summit in Rio in 1992, the Canadian government stood up for the rights of NGOs, and women particularly, to make their contribution.

4/ It is no accident that Canadians are committed to various multi-stakeholder processes. The nature of Canadian democracy differs from other countries in its more consultative approach — exactly the style needed on the international stage to achieve sustainability.

So, if we had the right attitude, reputation, experience, and vision to be national and international leaders in sustainability, what happened en route?

Loss of momentum

Government restraint initiatives have increasingly cut off much of the traditional support to the NGO community. Alternative funders, corporations and foundations are swamped with requests which they cannot meet. Individuals, themselves experiencing financial restraint, are buried under piles of direct-mail appeals. As a result, NGOs, like government and private enterprise, are being forced to lay off employees and face the prospect of going out of business.

Environmental NGOs, struggling to survive as organizations, have to devote their energy to fundraising rather than continuing to push fully on sustainability issues.

The decimation of environmental advocates is a serious problem for Canada, particularly since the government acts primarily as a broker. When the government is left with only business or industry input, it tends to make unbalanced decisions.

Sustainable decisions can only be made when there is full consultation, and all points of view are considered. Without outside pressure, the government's momentum has slowed. As the government has become increasingly preoccupied with downsizing, it has fallen behind public understanding of sustainability.

The worst aspect is that government often appears to be dealing with the issues by introducing legislation, when in many cases the legislation remains unenforced.

At the same time few corporations have maintained their forward motion in implementing sustainable resource management. Private entrepreneurs have become preoccupied with short-term survival.

Others have regressed into denial of the need for change and have retrenched in a last ditch effort to fight 'sustainability'. Yet refusing to face the need for sustainability is fatal in the long term— both for business and the species. 'Survival of the fittest' will not lead us to real sustainability.

To get there, we must cooperate, collaborate and compromise in the finest Canadian tradition.

Resisting the backlash

We all experience internal backlash when we try to change our behaviour. Greening our lifestyle can be uncomfortable. Similarly, institutions experience backlash.

Progress becomes blocked by inertia and fear, and visionary leaders are often censored even if, or perhaps because, they are correct in their thinking. There is only so much change we can accommodate without special support mechanisms and incentives.

Planned change requires tax incentives, job retraining, peer support, and celebration of progress. We must take backlash into account; otherwise we cannot avoid some of the detours on the road.

Incomplete vision

Everyone talks about globalization and free trade with a mixture of awe and fear. Even though the social and environmental costs of unrestricted free trade have been documented, the destruction continues as we follow the dictates of the new harsh dogma of profit.

Canadians mourn the loss of security in our cities, clean air and water, relationships with our neighbours and local businesses. It's easy to throw up our hands and say, "There is nothing we can do. It is bigger than us." Fear of the unknown can immobilize us.

What we need are tangible examples of the new sustainable society — what it looks, feels, smells and sounds like. However, we don't always see that a profound shift in values is already occurring. Canadians are rebuilding healthy communities, becoming involved in schools and community associations, choosing to support local businesses or forming cooperatives.

We can resist the 'dictates of the global market place' because we are the market place and we know we must rebuild the clean, green and safe communities we have lost.

We cannot return to 'the way we were,' but we can create a new hybrid model by consciously deciding the kind of community in which we want to live— a community with fewer gadgets and more relationships.

We need to experiment and share our success along the way. We need to invest in creating more models. If some of them fail, we can still learn from them. We must not be afraid to dream. Our ideals will keep us going when the way seems difficult.

Institutional gridlock

As the Brundtland Report points out, we do not have adequate institutions to deal with the challenge of sustainable development. We need institutions that:

- integrate and coordinate the hundreds of independent agencies involved in each issue. The piecemeal approach results in confusion, inertia and duplication.
- integrate decision-making on economic and ecological issues together. We must go beyond the issue of 'jobs or environment', to provide jobs that allow the planet, and all of us, to survive.
- are open to popular participation. Current structures are closed and exclusive when they need to be dynamic and inclusive. The survival of the planet is going to require the various talents of all people who traditionally have been excluded from decision-making processes,

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Canadians invited to make a difference

National Community Tree Foundation and ISACC Advisory Committee

The National Community Tree Foundation (NCTF) is an arms-length implementing body of Tree Plan Canada, a national tree planting and care program. Tree Plan Canada, an invitation to all Canadians to make a personal contribution towards offsetting the major environmental problem of global warming, was an initiative of the federal Green Plan for a Healthy Environment that is funded, in part, through Forestry Canada.

The NCTF was created to manage that program and to administer its funding. The goal of the NCTF is to foster and encourage the planting of 325 million trees before 1998.

There are two aspects of Tree Plan Canada: Partnerships and Sponsors. The Partners programs provide funds and technical advice to groups who want to plant trees and can contribute labour, materials, services or a share of the project's financial costs. Eligible projects are evaluated on their environmental, aesthetic or recreational benefits; degree of ongoing tree care and maintenance; extent of the applicant's contribution, both financial and in-kind; and technical soundness of proposals. Under the Sponsors Program, the NCTF partners corporate sponsors with community groups who plant the trees.

Much of the focus of Tree Plan Canada funding was initially on the provision of seedlings. Consequently, many urban municipalities chose not to participate to the level that the NCTF had hoped. as a result, a new program, Green Streets Canada, was developed to recognize the tree-planting accomplishments of Canadian municipalities and to provide up to $7.5 million to the program over the next five years. This funding is to help communities of all sizes to improve their urban forests and provide an appreciation of how trees contribute to both the environment and the economy. Proposals under this program may involve trees of all sizes but must have a substantial community volunteer component and a provision for care and maintenance.

The NCTF recently announced that both Surrey and North Vancouver became recipients of $75,000 grants under this program. So far, only the City of Ottawa has been granted the maximum of $100,000.

An advisory committee of representatives from the Canadian Chapters of the International Society of Arboriculture (ISA) was created this past February at the request of the NCTF to draw upon the collective urban forestry experience of the member groups across the country. The mandate of the committee, representing British Columbia, Prairie, Ontario, Quebec and Atlantic chapters, is to review and comment on technical information from the NCTF and offer recommendations on program direction and policy formulation. The NCTF feels this will allow them to advise their Board, with confidence, for or against notions regarding the program. Members will also establish networks within their regions to promote the activities and programs of both the NCTF and the ISA as well as work to solidify the ISA in Canada through increased exchange of ideas and information among the regions.❖

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such as women and aboriginal peoples.

So, how do we get out of bed and back on the path? It is a challenge to all of us.

Canadians have some comparatively advantageous luggage to take on the journey to sustainability: Canadian heritage of social responsibility and international image; agreed need to develop a green industry; visionary, committed ENGOs with expertise on sustainability; and success with multi-stakeholder processes.

But we need to overcome the roadblocks: loss of ENGO momentum and public interest collaboration; international and internal backlash; incomplete vision and lack of alternative models; and institutional gridlock.

We are left with the challenge:

- to government and industry to hold out a hand to ENGOs;
- to ENGOs to work on models with a purpose higher than profit, yet including it;
- to avoid any detours into despair and fear;
- to create cross-disciplinary, cross-jurisdictional and cross-sectoral approaches to planning;
- to allocate resources so that they support healthy communities here and abroad. That is, to redirect funds from military security to social and environmental security; and
- to dare to dream of the kind of community we want and to make it a reality.

Canadians have the experience and credibility to lead the globe toward sustainability. We only have to meet the challenge.❖

Shocked seedlings or stressed contractors?

Dirk Brinkman

A new FERIC study finds that seedlings are more tolerant to heat and mechanical stress than the contracts most foresters issue. How did Canadian foresters and reforestation contracts become over-sensitized to the effect of contractor handling?

Two American evangelists from the Oregon State Silviculture Institute conducted a seedling handling revival tour of BC ten years ago, resulting in rigorous and costly stock-handling guidelines throughout the BC, Ontario and Alberta reforestation industry. While their concerns were based on sound scientific research, the research data was not measured within normal reforestation operations and may have created costs in areas which do not provide an adequate return.

The FERIC study took its measurements from field operations that, admittedly, are benign compared to the pre-seedling handling revival era. Ernst I. Sternberg, a researcher at FERIC, conducted this study called "Stock Handling from Nursery to Planting Site: an investigation into rough handling and its biological effects." Measured in the field between 1990 and 1993, the study will be published in early 1995 and is a definitive work that may rebalance some of our planting priorities.

Sternberg's stock handling study spans 22 field sites in Vancouver Island, the BC interior and Alberta, in addition to nine stock types, eight species, five planting months, ten contractors, five nurseries, and includes temperature, humidity, drop-height shock, growth, root chamber and survival measurements. Over the three-year period, the study encountered some surprising findings.

One is that "the amount of stress necessary to produce a negative effect was not found to be present in handling and transportation operations monitored." Sternberg came to this conclusion because "only four of 22 plots had statistically significant differences between... the lightly stressed seedlings and heavily stressed seedlings... This indicates that seedling-to-seedling variation (genetic effect), and effect of microsite, on growth of seedlings were greater in most plots than the effect of the combined stresses from handling, transportation and dropping."

The study also reports finding "[s]tatistically significant errors" in several plots. For example, in one seedlot of cold-stored lodgepole pine, the severely stressed seedlings had a higher number of new roots in a root growth chamber test than the control seedlings.

... mechanical stress in the form of shocks can negatively affect the growth and survival of seedlings ...

Sternberg did recommend that transporting seedlings on gravel roads can cause a large number of shocks, directly related to speed and road conditions. "It is therefore recommended that speeds be reduced on gravel roads... particularly on roads that have not been well maintained."

Another not surprising but unwelcome finding is that the transducer measured that the average cumulative shocks of transporting seedlings for the average ATV distance of 1 km was 276 cm. This is nearly as great as the average cumulative shocks of 346 cm, occurring over the average distance (i.e., 266 km) for all other transportation-semi, five-ton, and pick-up vehicles.

This leads to Sternberg's second recommendation that is directly concerned with safety: "All terrain vehicles (i.e., Honda Quads) can produce severe shocks to seedlings... and should be operated at walking speeds only."

Sometimes, it is difficult to slow down the youthful tree-delivery energy usually driving those "small lightweight Quads which bounce quite easily on rough ground." The recommendation for ATVs, however, stops short of the solution offered for semis: "air-cushion suspension may help reduce the size and frequency of shocks." Perhaps FERIC's next project can be to compare the various makes of Quad and the options available for improved shock-reducing suspension.

For foresters and contractors who have felt that the stress on transportation shocks is over emphasized, the conclusion that "the amount of stress necessary to produce a negative effect was not found to be present in handling and transportation operations monitored in this study" is validating.

Nonetheless, the study did find some evidence that mechanical stress in the form of shocks can negatively affect the growth and survival of seedlings, in particular, bareroot seedlings and seedlings planted in severe microsite conditions. Incidentally, "No shocks at all were recorded during helicopter transport."

Foresters can now better relate stock handling to seedling stress, by becoming more tolerant in some areas and applying more stress in others.❖

Code of environmental ethics and conduct

Canadian Environmental Network and Canadian International Development Agency

Note: Reprinted from National Round Table Review, *the newsletter for Canada's National Round Table on the Environment and the Economy, Fall 1994.*

The vision

We recognize that every human being is a part of the community of life on Earth, and that humans are subject to the same immutable ecological laws as all other species. This community links all human societies, present and future generations, and all other parts of Nature. It embraces both cultural and natural diversity.

All life depends on the uninterrupted functioning of natural systems that ensure the supply of energy and nutrients so ecological responsibility among all people is necessary for the survival, security, equity, and dignity of the world's communities. Human culture must be built upon a profound respect for Nature, a sense of being at one with Nature and a recognition that human affairs must proceed in harmony and balance with Nature.

Preamble

Each individual should have the right to a healthy living environment. It follows that no one individual or entity has the privilege to endanger the environment to the extent that it adversely affects ecological sustainability.

Development can only be sustainable in the long term if it ensures the integrity of the planet's life support systems while simultaneously meeting basic human needs. Real sustainable development must involve an effort to integrate development into the natural environment rather than the reverse.

Just as the sustainability of natural systems is maintained by a set of laws which govern the interrelationships of its elements, society needs to promote human ethical values which govern our interrelationship with all things. The role of this Code of Environmental Ethics and Conduct is to articulate shared values so that individuals and organizations may act in a way which is conducive not only to their self-preservation, but also to the well-being of the environment which sustains them. Another function of the code is to act as an adaptive instrument that encourages our obligation towards Nature, which is seen as provider and sustainer of our life-support systems.

Basic premises

The following are basic premises governing the code:

- The most fundamental unit of the biotic community is life.
- Life has in the course of its evolution produced a diversify of living forms.
- Every life form has a unique history and has co-evolved with other organisms to form natural systems.
- Humankind is a part of Nature and a part of the diversity of living forms.
- Our knowledge and understanding about the complexity, diversity and interrelationships of life and living systems remain rudimentary
- Because of their physical and intellectual capabilities, humans are the life form with the greatest potential to regulate their own activities to affect the elements of natural systems in either a positive or negative way.
- Humans, to varying degrees, have altered the natural systems of the Earth to such an extent that many

extinctions have already taken place, and the existence of countless species, including our own, is in jeopardy

- There is now overwhelming evidence suggesting that the sustainability of our life support systems is incompatible with current consumptive growth patterns and the rate of human population growth. In accepting these basic ecological premises, we agree to the following ethical principles:
- Every life form is unique, and has intrinsic value regardless of any perceived value that it may have for humans.
- We should have profound respect for Nature in all its diverse manifestations. It is important for us to maintain or restore a harmonious relationship with other species within the limits of natural systems.
- All persons should take responsibility for their impact on Nature.
- Many local and indigenous peoples (women and men) have a unique knowledge of their regional ecosystems. This knowledge and the culture of which it is a part should be respected and sustained. Local cultures should be allowed to determine their own futures.
- We should pursue and adopt the values that will address current consumptive patterns and the growth of human populations.
- For the benefit of future generations and the survival of the planet's living systems we must plan for the long term.

Appropriate conduct

Based on the above ethical principles, we subscribe to the following basic principles of appropriate conduct:

- Considerations of environmental, cultural, social and other values than those measured by economics should be factored into the decision-making process as a step towards full-cost accounting for proposed projects.
- Due to our limited understanding of their functioning, we recognize that it is the human use of natural ecosystems that must be managed rather than the systems themselves.
- We must avoid actions that contribute to the extinction of any species, or that seriously degrade or eliminate habitats.
- Ecological expertise should be fully incorporated into the development process.
- Development should reflect the needs of local people within local ecosystems. Decision-making for just and ecologically-sound development must ensure the participation of the individuals and groups most affected by the undertaking. Indigenous or local knowledge of ecosystems and their use should be incorporated into development decisions.
- All those who may be affected by a proposed development should have full access to the planning and decision-making process, including all available pertinent information.
  Upstream activities often have unpredicted and detrimental downstream effects. Therefore to the greatest degree possible, the full range of risks surrounding any development project should be assessed as part of the planning process and should be addressed in the design and planning stage before implementation.
- Restoration and sustainable use of degraded ecosystems combined with protection of remaining natural areas should be seen as important aspects of sustainable development initiatives. Precaution should prevail in order to avoid unnecessary remedial action in the future.

N.B. This Code of Environmental Ethics and Conduct addresses the 'environmental' component of sustainable development and not the full range of integrated activities necessary for sustainable development.❖

FRDA to expire

Ian Dennison

Note: Edited letter to Prime Minister Jean Chretien, Dec. 5, 1994.

As you may know, PEI's second one-year extension agreement (FRDA) expires March 31, 1995— just around the corner. What you may not be aware of is the extent to which forest partners here are willing to cooperate and contribute. We know about the fiscal reality, and so we're willing to do our part. We have achieved agreement in principle with our member organizations— woodlot owners, forest contractors, workers and sawmillers— to help finance silviculture activities through a levy on sawlogs going in the mill gate. Much has to be done to make this work, particularly since 50% of our logs are exported to off-island mills. But we're committed to trying it.

We're asking your government for a commitment in response. There is no question of not doing silviculture, or saying we don't have the money for it. We don't need to land where the fishery now finds itself to prove this point. Unfortunately, the response to date from Ministers McLellan and Dingwall to woodlot owner groups has not been encouraging. Let's get on with the job of forest renewal.❖

PEI Forest Industry Association

Box 27, Victoria PEI

C0A 2G0

Ian Dennison, President

Taux injustes

René Ouellette

Le gouvernement du Québec a proposé une nouvelle grille des taux admissibles en 1995 pour l'éclaircie précommerciale. Pour établir la valeur des traitements sylvicoles admissibles à titre de paiement des droits, le gouvernement prend en considération seulement les tiges résineuses supérieures à 1,5 mètres et les tiges feuillues supérieures à 2,2 mètres.

Ces taux sont établis en fonction d'une étude réalisée par le gouvernement du Québec sur l'influence des facteurs de terrain sur la productivité des travailleurs lors d'une éclaircie précommerciale.

Nous croyons qu'il est faux de penser que le travailleur ne soit pas retardé par

le nombre de tiges inférieures à 1,5 mètres pour les résineuses et 2,2 mètres pour les feuillues. Il faudrait que les travailleurs aient un certain ajustement après avoir franchi une limite de tiges à l'hectare inférieures à ces limites proposées. Le fond du terrain et le pourcentage de déchets au sol sont sous-estimé dans l'étude, qui ne tient pas compte du taux de blessures des travailleurs.

Ce rapport ne tient pas compte non plus du fait que, dans les secteurs d'hiver, le traivailleur doit effectuer une marche d'une heure le matin pour se rendre au terrain, et une heure le soir pour rentrer — ce qui représente une perte de temps énorme et une réduction du nombre d'hectares débroussaillé en une journée, en plus de la fatigue qui augmente.

Ceux qui font exécuter ces travaux, soit les entrepreneurs sylvicoles, n'ont pas participés à cette étude. Comment voulez-vous que les résultats soient justes, étant donné les différents terrains dans lesquels on doit travailler? Le gouvernement n'a-t-il étudié qui les terrains où les chemins étaient accessibles par camion?

Une étude à laquelle tous les intervenants avaient participé aurait été beaucoup plus précise. On aurait obtenu des données réalistes, à partir desquelles on aurait pu établir la grille la plus représentative du taux qui convient au terrain.

English Summary

Quebec's 1995 rates for precommercial clearing are off the mark. The rates are based on a provincial study that falsely assumes that only coniferous saplings higher than 1.5 metres and deciduous saplings higher than 2.2 metres affect productivity.

Conducted without the participation of silviculturists in the field, the study also fails to take into account the time and effort required to work in sectors that are snow-bound and not accessible by road.❖

New forest act not yet sustainable

Grant Brodeur

Note: Edited version of the OSCA presentation to the Standing Committee on Bill 171 (Crown Forest Sustainability Act), August 31, 1994.

The proposed Bill is going to have a profound effect on the way our clients, both the MNR and FMA holders, do business and thus how we conduct our business in turn. Although the amount of time to thoroughly review the Bill is limited, especially in terms of the working manuals, I will comment on general areas of support and areas of concern.

The Ontario Silvicultural Contractors Association (OSCA) is a provincial association dedicated to assuring the sustainability of Ontario's forests. Currently, the membership represents the majority of the work conducted in the province.

Unfortunately, as the provincial budgets for forest renewal have been slashed during the past years, so have the association's operating budgets as contractors go out of business.

Areas of support

A new direction

The OSCA supports the process of updating the existing Crown Timber Act. Bill 171, once passed, will allow for the sustainability of the forest by a collective of all stakeholders and users of the provincial forests.

However, the question is whether there is sufficient time in the Bill's proposed time table to fully develop enabling legislation that will be supported by all the affected and interested parties.In order for the province to consider the forests to be managed for sustainability, power must be given to the trained and competent professionals to act as they see fit. Through consultation with all the users and stakeholders, the professionals are best suited to making the decisions for the public as to what is best for the forests. To that end, the new powers given to the Minister in the Bill should be reviewed.

Ontario Silviculture Contractors Association
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Box 171
Toronto, Ontario
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Grant Brodeur, President

Trust funds

During the past five years, we have experienced drastic reductions in the provincial forest renewal budget. As a direct result of budget cuts, the number of seedlings planted in the province have been virtually cut in half from a high of 175 million in the early 90s.

Even when the artificial cap on seedlings planted was at the 175 million tree level, demand was for more seedlings. Both British Columbia (a Canadian model?) and Sweden (a world model?) harvest approximately the same amount as Ontario, but have considerably larger replanting programs. As a result of the severe cuts in the provincial forest renewal budgets, Ontario is risking the sustainability of not only the forests, but of the economy as well. Without a well-planned forest renewal program, there simply will be no trees to cut and no taxes to collect.

... Ontario is risking the sustainability of not only the forests, but of the economy as well ...

The proposed Forest Renewal Trust Fund and the Forestry Futures Trust aim at alleviating the concern of budget cutbacks for forest renewal. This section of the Bill is by far the Bill's most important aspect with regards to the provincial forest renewal and stewardship programs.

Without a safe, secured and auditable source of funding, the forest cannot be sustained for future generations.

Advisory committees

The establishment of advisory committees is supported by not only the OSCA, but by all stakeholders and concerned interest groups. By participating in local decision-making and by having knowledge of the process of sustaining the forests, everyone wins.

An area of concern, however, is the composition, function and power of the various committees, which should be reviewed.

Timber to forest management

The concept of timber management to forest management is now widely accepted as necessary to sustainable development. However, concern must be expressed over simply "exchanging" timber with forest, without a full review of the implications. Consideration must be given to who is the best suited manager of the forest. The government has ruled on the side of timber management but this should be reconsidered. Certainly, the timber harvesting companies are not in a position to manage the forest when there is such a vast array of management areas that they have not only no interest in, but no expertise either.

Areas of concern

The need for a pre-harvest prescription

The legislation, as currently written, suggests the Minister *may* require a pre-harvest silviculture prescription. How is a plan to be written to ensure sustainability if there is no plan at time of harvest? Without a thorough plan prior to harvest, the forest is already deprived of potential valuable natural renewal resources.

By identifying and planning the areas with advanced understorey, potential seed trees and other natural tools of forest renewal, sustainability and bio-diversity targets are far easier and less expensive to achieve.

Without a plan, how can success be measured?

Defining sustainability

The purpose of Bill 171, from what I understand, is to ensure sustainability of Ontario's forests. However, the Bill lacks a clear definition of what sustainability is. I would recommend that the Bill adopt a definition of sustainability from the vast collection of material already compiled, addressing the sustainability of Ontario's forests.

This includes the Diversity document, the Audit of Regeneration in the Boreal Forest, and most notably, the Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario.

Considerably more time, effort and consultation has taken place on the construction of these documents than will take place on this Bill's development.

Conclusion

I trust the much-needed further development of Bill 171 will lead Ontario into the next century as a leader in sustainability.❖

Conservation and aboriginal groups tell Ontario to scrap "green" forestry act

Tim Gray, Wildlands League

Note: Excerpted from a news release dated Aug. 29, 1994, and a brief submitted to the Standing Committee on General Government by Ontario's conservation community.

Conservation groups and the Union of Ontario Indians joined together to warn the Ontario public that the proposed Crown Forest Sustainability Act (CFSA) is so seriously flawed that it should be withdrawn. The CFSA does not define sustainability and will not require that Ontario's public forests be regenerated.

The Crown Forest Sustainability Act (Bill 171) was announced by the Ontario government this spring as the method of delivering "green" forestry to Ontario. In its current form, the new Act is more damaging ecologically and economically than the existing outdated 30-year-old legislation.

"Throughout the last four years the public has been faithfully participating in processes designed to bring together the forest industry, labour, and the concerned public. Much to everyone's surprise and pleasure, we have attained a high degree of consensus. Several multi-sector committees have consistently recommended that Ontario begin to practise sustainable forestry. This Act fails to deliver and cynically disregards the public discussion of the past four years," says Rick Lindgren of the Canadian Environmental Law Association.

"Nothing in this Act helps to facilitate the transition to co-management and economic independence," adds Alan Roy of the Union of Ontario Indians.

The Government promised to bring Ontario forestry legislation out of the 19th and into the 20th century. They have failed. Concerns about where Ontario is taking its forests is mounting around the world.

Letters of concern have arrived from overseas, all encouraging Premier Bob Rae to live up to his promise to reform forestry in Ontario. "Failure to act in a responsible manner now will give us closed sawmills, devastated communities and a degraded environment," says Chris Lompart of the Federation of Ontario Naturalists. "A sustainable economic future for Ontario must include natural resources, and this Act does nothing to ensure a future for forest-dependent communities," he adds.

Does Bill 171 reflect a commitment to forest s sustainability? The Crown Timber Act is the legislative base for forest management on Crown land in this province. It has not been substantively rewritten since the 1960s. The Act is now very much out of step with both current knowledge of forest ecology and management, the fiscal realities of the 1990s, and the needs of the Ontario public.

... the Act is out of step with current knowledge of forest ecology ...

Bill 171, also called the Crown Forest Sustainability Act, has been developed to replace the Crown Timber Act and was scheduled to pass third reading and become law by late in the fall session of parliament. The Ontario public will welcome a new forest act that requires that forest management be based on the sustainability of ecosystems, communities, and products. They will not welcome nor accept an act that promises sustainability, but lacks the substance to deliver.

A problem summary

1/ Currently the Act does not define, nor make reference to a definition of forest sustainability. The world has spent the last ten years developing definitions based on the biological imperative inherent in the concept of sustainability. It is almost unthinkable that an Act, titled as this one is, and dealing with a biological entity such as forests, could become law without such a definition.

2/ The principles of forest sustainability, included in the Policy Framework for Sustainable Forests and approved by the Ontario Cabinet, are not included in the Act, contrary to previous public commitments.

3/ The current wording of the Act appears to constrain the ability of the Ontario government to settle aboriginal land claims, create new protected areas or recreational reserves, or to designate Crown land for other non-timber purposes.

4/ The transfer of responsibility for forest management and regeneration from the Ontario government to the forest industry will not occur under a clear, enforceable framework if this Act is passed in its current form. Such an outcome will leave the public and the government at risk.

Financial constraints

Fiscal pressures have frequently required the Ontario government to reduce the amount of funds available for forest management and regeneration. The result has been that timber harvest, a responsibility of the government, has consistently exceeded our ability to regenerate the forest, a fact long asserted by the general public and business community, and confirmed by the Audit of Regeneration in the Boreal Forest completed in October 1992. It has become increasingly apparent that there is a need to dedicate a portion of the funds obtained from the taxation of harvest to the job of regrowing the forest.

There is a corresponding need to ensure that these funds, no longer under the control of the Treasurer of Ontario, are dedicated to the purpose of ensuring the sustainability of the public resource.

Trees to the forest

In the years since the Crown Timber Act was developed, the demands on the forest have grown, as has our knowledge of its complexity.

In recent years, confrontation and conflict have highlighted a struggle to move the management of our forests from one focused on the production of timber to one focused on the maintenance of the forest as a viable functioning ecosystem, capable of sustaining wildlife habitat, water, soil and air quality, and providing for recreational, cultural and tourism activities.

These public demands coupled with competing industrial demands on a shrinking resource base have caused forest managers to begin to think more broadly and recognize the finite ability of biological systems to produce the materials and services that we all require.

The existing Act, regulations, and policy do not provide the tools that forest managers, operating in the late 20th century, require to effectively carry out their job.

The need to define sustainability

Currently, the Act does not define, nor make reference to an external definition of sustainability. The world has spent the last ten years developing definitions based on the biological imperative inherent in the concept of sustainability. It is absurd that an Act, titled as this one is, and dealing with a biological entity such as forests would not include such a definition. It is also significant that "determinations of sustainability" do not provide clear definitions. Therefore the Act as it stands does not even require the manuals to define what the Ontario government wants our forests to sustain. In addition, contrary to the statement in the Act, none of the regulations contain references to the sustainability of the forest.❖

For more information, contact Tim Gray at the Wildlands League, 1335-160 Bloor Street East, Toronto, Ontario, M4W 1B9 or (416) 324 9760.

Actions Versus Promises

Below are provided a list of commitments that have been made, paired with a summary of what the Act actually contains.

What was promised: The new Act will require that public forests be logged at the rate that they can be re-grown, and all logged-over areas be regenerated.

What the Act says: Sustainability is not defined, nor is it mandated.

What was promised: Logging plans cannot be approved by the Minister unless they are sustainable.

What the Act says: Logging plans will be approved if the Minister thinks, in his/her opinion, they are sustainable.

What was promised: The Principles of Forest Sustainability, adopted by cabinet after two years of extensive and costly public consultation, would be included in the Act.

What the Act says: The Principles have been ignored.

What was promised: First Nations' land claims will be quickly settled and Ontario's system of protected areas will be completed by the year 2000.

What the Act says: Plans cannot be made for protection or for other non-logging purposes in areas where logging licenses have been signed. Currently, virtually all of Ontario's public productive forests have been assigned to logging companies.

What was promised: Strict audit procedures would be included in the Act to ensure that our forests are harvested sustainably.

What the Act says: Audits are unnecessary and will not be conducted.

What was promised: Strict new rules and fines will apply to logging companies who damage the forest.

What the Act says: Fines will be applied at the discretion of the Minister. There are no circumstances where fines would be automatically applied.

What was promised: The Act will require that a plan for regenerating all forests be developed before they are logged.

What the Act says: These plans will not be required.❖

1994 fire season sets record

Note: BC MOF news release, Oct. 18, 1994.

The 1994 fire season in BC was the worst on record for fire starts, but the area damaged was much smaller than average, according to Forests Minister Andrew Petter.

"Even though the fire season officially ended October 15, we still have fires burning in BC," Petter said. "It has been a very difficult year for our fire crews but they met the many challenges with vigor and determination.

"Their hard work helped limit the damage to 28,366 hectares, well below the 10-year average of 55,000 hectares."

During the official fire season, which began April 15, there were 4,068 wild fires in BC which cost about $79 million to extinguish. During an average year, fire crews battle about 2,900 wildfires. Petter said weather was the biggest factor in this fire season.

1994 Fire Statistics

Region	Fires	Area Burned
Vancouver	441	1296.6 ha
P. Rupert	224	741.6 ha
P. George	589	4606.9 ha
Kamloops	1227	15276.0 ha
Nelson	1072	5706.7 ha
Cariboo	515	738.2 ha
BC Totals	**4068**	**28369 ha**

"The summer of 1994 had some of the most intense fire conditions we have ever seen in BC. We had high temperatures, low humidity, troublesome winds and lightning across the entire province."

Ten large-scale fires— an unusually high number— were burning in the three weeks between July 20 and August 8 in BC. Adding to the fire danger, an intense lightning storm moved through the province between August 3 and 5, delivering a record 51,000 strikes which triggered 1,200 new fires. Lightning triggered about 72% of the fires this year, while humans caused about 28%. The split is more typically 50% for each cause.

"On August 6, there were 1,061 fires burning and over 5,000 fire fighters battling to limit their spread and damage," said Petter. "This was the worst day we have ever experienced.

"The BC fire fighting crews are among the best in the world and they faced enormous challenges this summer," said Petter. "Their efforts were nothing short of sensational."

Compared to the rest of Canada, BC had 43% of the nation's wildfires but lost less than one percent of the area.❖

FRTA / WSCA joint 1994 conference

Don Whiteside

In April 1994, a group of trainers met to discuss the possibility of forming an association. As a result, the Forest Resource Trainers Association (FRTA) of British Columbia was registered as a non-profit society in July 1994.

I had the opportunity to speak with many trainers throughout the field season, and the executive has met via conference call several times over the season. We've had some interesting discussions.

However, the general feeling is that we need to meet as a group to formalize our role in the emerging forest resource training sector. We've been able to make some assumptions but we need your input. Trainers' attendance at the upcoming AGM is crucial.

With 31 paid members, finances are a consideration. A number of ideas were floated around to keep costs down. The steering committee felt that the best plan would be to hold our conference and AGM one day prior to the WSCA conference, and join them for their second day of information sessions and speakers. We are pleased that the WSCA also felt the joint conference would be beneficial.

Considering the WSCA has a speaker wish-list almost identical to ours, this decision has kept costs down and allows us to introduce and define our association to the WSCA membership. As they are our potential clients, this arrangement is a win-win situation.❖

Registration for the two-day event (February 1 and 2) will be $100, including a buffet dinner. Contact Don Whiteside at (604) 732 8675 for more information.

New restrictions to bidders

Henry J. Benskin, RPF Director, Silviculture Branch

Note: Edited memo to all MOF Regional Managers, District Managers and Silviculture Manual Holders, Aug. 24, 1994.

The "Interim Silviculture Contract Administration Policy Directive" was developed to ensure that the public interest is adequately protected during the Silviculture Contract acquisition process. This directive is applicable to all silviculture contracts, and is effective immediately.

The contracts "Particulars for Tree Planting" and "Particulars for Surveys" have been updated to reflect the new directive. All silviculture contracts must include the new bidder eligibility requirements discussed below.

The additions to the contract bidder eligibility criteria are necessary to restrict the bidding of individuals or companies charged or convicted of an offense in a Ministry contract. The bidder eligibility requirements specified in prior silviculture contracts focus primarily on experience requirements and stipulate that the bidder must have previously demonstrated the ability to satisfactorily complete a silviculture contract.

In the past, Silviculture Branch or Ministry audits, and discoveries made by Ministry staff or information received from the public have led to charges and convictions of an offense in respect to a Ministry contract.

Consequently, the following policy restricts the bidding of contractors charged or convicted of an offense in respect to a Ministry contract. Any silviculture contractor charged or convicted in this way will be placed on a "Provincial Silviculture Contractor Ineligibility List" for a period of two years. The Silviculture Branch will be the custodian of this list.

... the policy restricts the bidding of contractors charged or convicted of an offense ...

Policy Directive

When contracting silviculture works and services, Ministry Offices must use the following bidder eligibility criteria:

1/ The Ministry reserves the right *not* to accept bids from individuals, companies, shareholders or officers who have had a silviculture contract canceled, or all or part of a performance security retained, or a charge assessed for failing to comply with the requirements of a previous silviculture contract, or been charged or convicted of an offense in respect to a Ministry contract.

2/ Unless the Ministry has reasons to believe that problems referred to above have been resolved, contractors will normally be disqualified from bidding for a period of up to two years.

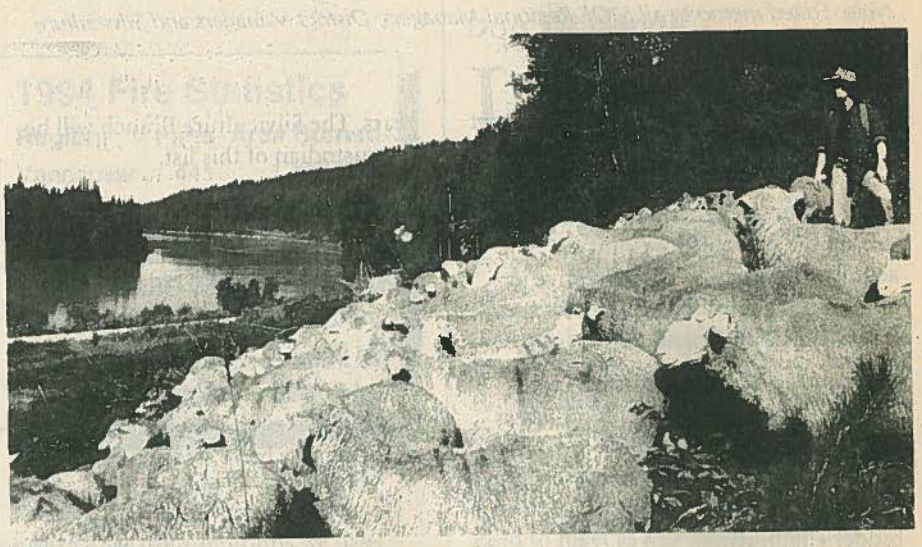
3/ If the Ministry does accept a bid from an individual or company referred to above, then the Ministry reserves the right to require the contractor to submit a statement of business organization and workforce availability, to determine the bidder's ability to successfully complete the contract.◆

For more information, contact Paul Rehsler, Silviculture Contracts Specialist, Silviculture Branch at (604) 356-6043.

British Columbia sheep grazing in 1994

Dennis Loxton

The BC Sheep Vegetation Management Program successfully grazed approximately 42,000 sheep on plantations again this summer. BC farmers supplied about 12,000 sheep and managed their own contracts. About 30,000 sheep were trucked in from Alberta and Saskatchewan.



These sheep were rented by silviculture contractors who specialize in sheep grazing and who have three very serious bosses— the farmers, the foresters and the Minister of Environment.

Before leaving the farm, all sheep grazed on BC plantations must be certified in accordance with the very rigid terms of the "Health Protocol for Sheep used for Vegetation Management in BC."

This ensures that they are healthy, have all of their teeth, and have been vaccinated against, or treated for, every disease or parasite that may threaten the health of British Columbia wildlife. This "Health Protocol" has been a great step forward in the maturation of this relatively new industry. Like all new silvicultural techniques, the sheep vegetation management industry has gone through its share of growing pains. At first, it all seemed so simple: Foresters need the vegetation reduced and sheep eat vegetation.

Shepherds and dogs manage the sheep, the sheep get fat, the farmers are happy and the foresters put the cheques in the mail. Needless to say, contractors learned the hard way that sheep contracting wasn't always as easy as it seemed. Some sheep didn't get fat, some farmers weren't happy and some foresters didn't put the cheque in the mail.

There has been a tremendous amount of progress made in the last few years. Sheep grazing contractors are definitely getting more efficient and maintaining a higher degree of professionalism.

Many BC foresters are getting away from the old "low bid" system, and instead, are awarding contracts based on contractor qualifications, experience, staff expertise, and quality of livestock and equipment.

Now the sheep are getting fat, grazing more hectares better and cheaper than before. And the farmers, foresters and the Minister of Environment are generally impressed with the progress of the industry.

The British Columbia silviculture industry is well on the way to establishing sheep as an environmentally safe and cost-effective vegetation management tool.

We have the potential of grazing many thousands of hectares of plantations, saving millions of doomed seedlings, while producing high quality meat, wool, and jobs, and improving the corporate image of the BC forest industry.❖

BC proposes value-added credits

Note: From BC MOF news release, Oct. 23, 1994.

Forests Minister Andrew Petter has announced that BC plans to establish a credit system to help increase the wood supply available to the value-added manufacturers.

Increasing jobs and enhancing community stability

When the government announced the Forest Renewal Plan in April, a key component was the commitment to increase jobs and enhance community stability by promoting the value-added sector. In order to do that, more wood must be made available to value-added manufacturers rather than being shipped out of the province as commodity lumber.

More wood for value-added manufacturers

Adding value to our forest products before export means more jobs for British Columbians. Remanufacturers require a reliable supply of appropriate lumber at a satisfactory price. But value-added manufacturers have had difficulty in obtaining the supply of raw material needed.

... wood must be made available to value-added manufactures rather than being shipped out of the province ...

Establishing a credit system is one way to increase the wood supply for value-added manufacturers. Such a system will give value-added companies more opportunity to secure wood from major forest companies.

Proposed credit system

The proposal for a credit system to provide more lumber to remanufacturers was developed by an Industry Structure Working Group set up by the Forest Sector Strategy Committee. This working group had representation from a wide variety of forest industry sectors, including independent remanufacturers, major licensees, and independent loggers.

The group proposed a credit system whereby a company's right to purchase logs harvested under the Small Business Forest Enterprise Program will depend on the amount of wood it makes available to remanufacturers.

Remanufacturers would be able to issue credits to their lumber suppliers, who could then use the credits to gain access to logs they require. The more lumber the supplying company makes available, the greater the volume of logs that a company would be entitled to purchase.

Consultation with stakeholders

A considerable amount of work needs to be done to determine how the credit system would work. Issues need to be identified, the nature of the system must be determined, and viable options developed for the implementation and administration of the credit system. Stakeholders will be consulted on questions such as:

- Who will be entitled to issue credits?
- Who will administer the system?
- Precisely what rights will be inherent in a credit?
- What disciplinary mechanism will underlie the system and on what legislative or contractual basis?
- What mechanism will deal with disputes concerning the timing and price of lumber-sales offers and the form of lumber offered for sale?◆

WCB violations in camps

Larry Langille

Note: Edited letter to VP Occupational Safety and Health, WCB, March 25, 1994.

I have spent two years and traveled 33,000 miles of bush roads to find out that there seems to be minimal inspections or none within tree planting and horticulture operations.

This is of particular concern when you consider that within tree planting and horticulture, there are somewhere around 30,000 employees. The majority are first-timers (ages 13 to 18), and the second largest group consists of university students.

The prime contractor in all of these cases is the Environment, Lands and Parks Ministry and the Forestry Ministry. After my observations, I compiled the following list of concerns with the hope that WCB will implement changes to counteract the dangers of gross neglect:

1/ Inspections of remote and/or isolated tree planting, horticulture and/or environment-type jobs of first-time or summer employees. The inspection branch should cease the use of pick-up trucks in these areas. They are highly ineffective, taking too long to reach the site. Moreover, the pick-ups are highly visible and companies, hiding from WCB inspectors, can easily spot them. By contrast, MOF uses helicopters five days a week to keep informed of where companies are planting. The average time one-way from Prince George to Oselinka or Meselinka areas is five to seven hours driving or less than one hour by helicopter.

2/ The implementation of safety information for tasks at hand in French and English. The manager or supervisors on the job, if they have employees that do not speak English, must have someone on the job that can translate. These firms hire a large number of French-speaking people or people that speak other languages. The manager or supervisor on the job may not be able to communicate with these people. There must be spot checks every hour on every employee. When the employees are picked up at night, there must be a head count. As it is now, managers and supervisors are leaving these kids in the bush to walk to camp. They have no idea of direction, no protection, no flashlights. They are left on their own.

3/ ATVs: Regulations and safety rules on these must be implemented now.

- from two to ten wheels
- operator trained and provided with operator's manual
- safety equipment— helmet, gloves, eye protection, steel-toed boots above the ankle
- vehicle must have a headlight, a tail light, front brakes, rear brakes and a throttle that work, or vehicles must come up to WCB standards

BC is the only province with no regulations or safety standards for ATVs. Until the WCB can come up with safety standards, all of these machines must come up to the minimum standards of the manufacturers' recommendations on safety devices. This must include garden tractors, small four-wheel drive tractors, lawn mowers and riding lawn mowers. If the manufacturer makes a safety device or if there is a safety device, it must be on any and all machines at all times. There cannot be exceptions. In addition, the term "all terrain" must be applied to any vehicle listed above or used in the above manner.❖

Safety helmets a must for ATV users

Note: From Workers Compensation Board 1993 Hazard Alert.

You must wear a motorcycle-type safety helmet, meeting British Columbia Motor Vehicle Branch standards, when operating an all terrain vehicle (ATV). A study by the Consumers Product Safety Commission reported that head injuries were the major cause of death (about 70%) in accidents involving ATVs.

The majority of these deaths happened to people who were not wearing safety helmets. In addition to a safety helmet, you must wear suitable eye protection. The operators of ATV vehicles in British Columbia face many challenges.

They often work on difficult terrain that features dangerous obstacles and steep slopes. The danger of tipping or overturning is a constant one. Wearing a safety helmet helps protect you from the major risk of head injury.

Safe work practice

Protection should be your first consideration when using a safety helmet. The full-face helmet provides the most protection since it covers more of your face. Your helmet should fit snugly but comfortably. Always fasten your helmet's chin strap. It will do you no good if it comes off during a mishap.

Most manufacturers recommend that, under normal usage, you should replace your helmet every two to four years. However, if you notice any signs of damage before then, replace the helmet immediately.❖

Woodlot program doubled

Note: From BC MOF press release, Sept. 30, 1994.

Forests Minister Andrew Petter said the BC government will double the woodlot license program from 500 licenses to about 1,000 over the next three years. The volume of timber under the program is also expected to double from 500,000 to one million cubic metres on Crown and private land.

"This popular program provides opportunities to small-scale foresters who are committed to practicing sustainable, community-based forestry," said Petter. "It has long needed expansion, and under the government's Forest Renewal Plan, we're now able to do it."

Funding of $2.9 million is being provided by Forest Renewal BC, the agency created to oversee forest investments, as part of the $52 million in funding announced earlier this year.

Roger Stanyer, chair and chief executive officer of FRBC said, "Our mandate includes developing new approaches to resource stewardship and encouraging sustainable use. Expanding the woodlot license program is an excellent way to do that."

Woodlot licenses are area-based tenures that grant the exclusive right to harvest timber within their boundaries and generally consist of Crown and private land. The expanded woodlot license program will encourage more landowners to bring parcels of private land into forest production. Up to 600 hectares of Crown land can be included in Interior woodlot licenses, while coastal licenses are a maximum of 400 hectares.

... woodlot licenses are area-based tenures that grant the exclusive right to harvest timber ...

"Creating new opportunities for small innovative forest operators is another indication of government's commitment to change the way we manage our forests," Petter added.

Petter said that up to 85 new license opportunities will be advertised by March 31, 1995, and another 160 opportunities in 1996.

The current allowable annual cut for the program is about 500,000 cubic metres a year, of which about 435,000 cubic metres are from Crown land and 65,000 cubic metres are from private land.❖

Employee benefits for the WSCA

Theo J. Boere

The WSCA has completed negotiations to deliver employee benefits to our member firms' full-time employees. The employee benefits available include dental insurance, extended health benefits, disability benefits and life insurance benefits.

The WSCA retained an employee benefits consulting firm, The Shasta Consulting Group, to design, implement and administer the package. The designed package provides a comprehensive plan, a large degree of flexibility, and takes advantage of the purchasing power of the WSCA. The plan uses four separate insurance companies to ensure the best possible value for each benefit line.

Member firms may choose to participate and may custom design a plan to suit their own unique needs. Each benefit line has several options. A summary of the plan follows:

Benefit	
Life Insurance & Accidental Death and Dismemberment	3 Optional plans
Dependent Life Insurance	2 Optional plans
Short Term Disability	3 Optional plans
Long Term Disability	2 Optional plans
Extended Health Benefits	2 Optional plans
Dental Benefits	4 Optional plans

The quotation process is efficient and effective. Each member firm will receive an information kit with a quotation form inside that needs to be completed.

Once the desired benefits are selected, the form is mailed or faxed to the consultants. The consulting firm then prepares a quotation, which includes a description of the plan details and a cost summary, plus an individual employee cost summary.

Shasta has a toll-free 24-hour telephone number to assist in completing the quotation form. There is always somebody at Shasta who can answer any questions.

Once a member decides to go ahead with the plan, The Shasta Consulting Group handles all the administration and deals directly with the insurance companies on our behalf.

Any day-to-day questions are handled by our administrator at The Shasta Consulting Group. She is responsible for all administrative issues for the WSCA firms.

Future issues of *CSM* will describe the benefits package in greater detail, and provide ideas on how to make the best use of the program.❖

For further information, please call the WSCA office at 736-8660 or The Shasta Consulting Group at 1-800-663-7528.

Global warming trends and fire in the woods

Dirk Brinkman

The number of hectares burned during the past eight decades fits the pattern of a bi-product of global warming. From the 1920s to the 1940s, the number of hectares burned in Canada per decade constituted relatively minimal firefighting.

After World War II, returning Canadian troops — who were hyped on technology, fire towers, radios, spotter planes, and rapid attack crews modeled on wartime organization and coordination — immediately reduced the number of hectares burned.

However, despite improvements in technology, road access, water bombers and heli crews, the number of hectares burned increased. A proliferating bureaucracy and an increasing number of tourists and irresponsible campers may not be the only explanations: the curve of the number of hectares burned correlates too closely with the increase in atmospheric CO_2 (as measured at Mauna Loa) since the Second World War— yet another bi-product of the post-war baby-boom consumer-industrial society.

... the spring of 1994 was the hottest on record ...

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Rodent protection for seedlings

Dirk Brinkman

Rodents can cause mortality as high as 100% in recently planted seedlings, particularly during peak years in the population cycles of mice and voles. There are two options for protection of seedlings from rodents:

Mechanical protection

Plastic tubing can be used to keep the rodents away from the trees. The best product available is a spiral plastic perforated wrap used in the landscaping business. It comes in 30" lengths, and must be cut to lengths suitable for the stock. Since this wrap is a spiral rather than a solid tube, it expands as the tree grows, and should not require later removal, unlike solid tubing.

The disadvantage of any mechanical protection is that it must be applied in such a way as to deny the rodent access to the seedling on *every* tree planted, which is difficult in operational circumstances. As well, the tree inside remains highly palatable to the rodents.

Chemical protection

A commercial rodent repellent, sold under the trade name "Scoot", is widely used in the landscaping business. Applied by spraying, this chemical reduces the palatability of the seedling, and discourages the rodent from approaching the seedling. Used as a pure application, this treatment only lasts until the first rain.

However, mixed with Foligard, Scoot becomes somewhat water resistant, and will last through several rains. The disadvantage of Scoot, even when mixed with Foligard, is its short lifespan.

Conclusion

The preferred method for rodent protection is to use *both* the mechanical and chemical options together.

The chemical repellent reduces the palatability of the stems, thereby reducing the energy put into circumventing the mechanical protection by the rodents.

The mechanical protection provides long term protection as the seedlings grow. Used in this way, the stem would be enclosed in the spiral plastic wrap, planted and then sprayed with a mixture of Foligard and Scoot, using a gardener's misting bottle.

This will also inhibit the rodent from disturbing the tubing. This combined treatment will provide maximum protection from rodents in areas where rodent impact is high.◆

Is seasonal Unemployment Insurance history?

Dirk Brinkman

The Working Group on Seasonal Work and UI is touring the country. I was invited to meet with them, along with five representatives of other seasonal industries: (fishing, tourism, restaurants, hotels and small business), in Vancouver on November 29th.

We only received one day's notice of the meeting and— in my case at least— they received an opinion that was unfettered by numbers, deliberation or consultation.

Besides the normal tinkering with qualifying weeks, rate and duration of benefits, the Working Group was considering two main proposals to reduce UIC costs:

1/ Capping UI to people in higher income brackets. Most everyone who spoke supported this. I had the chance to provide the example of the immense disparity between silviculture earnings in the West and the East as a basis for suggesting that a regional cost-of-living factor should be reflected in these caps. Inevitably, there will probably be a cap in the near future.

2/ UI deductions to be based on experience rating. This would be structured like provincial WCBs and many States. A unique suggestion is that both the individual and the corporation be put on an experience rating.

According to the Working Group, seasonal workers make up 40% of UI claimants. The resource sectors— agriculture, forestry, fishing and trapping— receive $4.03 for every dollar they pay into the system. Currently, the finance, government and education sectors get about 50 cents for each dollar they contribute. Since in Canada resources are the engine of the economy, this has probably been a good symbiotic relationship. However, the deficit may be about to change the equation.

The forest industry receives $6.17 for every dollar it pays into the UI system. Statistics were not available for silviculture, but I expect that it's 150% that of forestry. (Former federal forests minister Frank Oberle once told me that the portion of workers claiming UI in silviculture is 32%, and in the forest industry, 21%.) This would mean that the silviculture industry collects $9.00 for every dollar it contributes.

Current UI employer contributions are 4.3% of wages. If the silviculture industry were to pay nine times that rate because of its experience rating— the contribution could become 38.7%. Also, the employee UI contribution could rise to 27.6%, a combined contribution of 66.3% of wages.

... continuity of funding from year to year is the critical problem ...

Of course, I did not have the benefit of these troublesome numbers to clutter my response. Expressing my support of this "consumer pays" approach was not easy. I did not get very far describing my "gut reaction" to the concept before the fishery representative intervened to say this would bankrupt his industry (obviously, he had done his math) and that it would be impossible to administer.

In retrospect, it is not surprising that the chair commented that I was one of the only supporters of experience ratings that he could recall among the representatives of seasonal industries across Canada. And, while I share the fishery representative's expectation that administration would be a nightmare, I still trust my gut reaction that a user-pay system would be healthy in the end.

Employers would be forced to change their hiring practices, those who award contracts and contractors would be forced to structure the work so that it is continuous, and employees would have to reform their income patterns. UI would cease to be viewed as a pay supplement and actually function as an insurance.

Continuity of funding is the critical problem, not just seasonally, but also from year to year. In the East, the lack of both public silviculture funding and tax incentives for private land silviculture is devastating the silviculture industry.

The federal and provincial governments have to cooperate in creating integrated tax incentives to stimulate sustainable forest management on private land. The elimination of tax incentives is causing the plunder of private forests. Meanwhile, the FRDA agreements are being cancelled, pushing UI claimants onto welfare. Changes will be made to UI with or without the input of this Working Group and its discussions. I doubt that the CSA comment will have much impact.

BC Forest Alliance representative Jack Munro did kindly call for better reforestation in the Maritimes, whose forests, according to Munro, "are a damn crime." He was also unimpressed with the UI training initiatives in Newfoundland, where massive training programs seem to ignore the lack of employment opportunities.

The Working Group will be reporting to the House of Commons as we go to print.❖

FRBC Stumbling

Note: Edited letter to Emery Barnes, MLA, Oct. 13, 1994.

Under Forest Renewal BC (FRBC), the government is increasing the money spent on silviculture from $250 million annually to $450+ million.

However, in its effort to put together FRBC, the government has left out a key player — silviculturists. When the FRBC board was named on July 19, it consisted of four members from the logging industry, three members representing government, a First Nations council member and an environmental law representative. Where are the members from the reforestation sector? Why wasn't the Western Silviculture Contractors Association (WSCA) — an organization whose members carry out the majority of all silvicultural work in the province — asked to send a representative?

Clearly, the FRBC has stumbled out of the blocks, but there is a simple solution to this dilemma. In a letter dated August 17 from Andrew Petter to the WSCA, the Minister makes it clear that the current FRBC board is an interim one and its composition will be reviewed at the end of January 1995. I urge you to ask the Minister to strongly consider appointing representatives from the silviculture industry to the FRBC board — particularly the WSCA.

- Neil Monckton, CSM Co-publisher

Putting it right

Note: Edited letter to Neil Monckton, Co-publisher CSM, *Oct. 24, 1994.*

I have conveyed your concern about the absence of silviculturists on the Forest Renewal BC (FRBC) interim board to the Hon. Andrew Petter. I trust he will consider your comments with a view to rectifying the situation.

- Emery Barnes, MLA

Inquiry into death provokes recommendations

Ralph Parker, BC Coroners Service, Ministry of the Attorney General

Note: This is a copy of the coroner's report which was forwarded to the WSCA , Sept. 29, 1994.

Noel Francis Sandusky died on July 24, 1994, at Chetwynd, BC. His death was due to injuries he sustained while being transported to a job site in a remote district in the Chetwynd area. He was one of a group of tree planters employed by Folklore Enterprises of Prince George.

Sandusky had been employed as a tree planter for three seasons. He had worked for this employer for several days. The crew had been working in this area for approximately one week. July 24th was a warm, bright and sunny day.

On the day in question, the workers left camp at about 0630 hours for transport to the work site. They were travelling in a large carrier commonly called a 'Rollogon'— a large, heavy vehicle designed for off-highway use only. Other names used to describe it include 'Swamp Buggy' and 'Bog Trotter'.

It is equipped with huge wide tires and was designed originally for use in swamp and muskeg such as one might encounter in and around oil and gas exploration areas in the northern portions of the Western Provinces.

... authorities are reviewing regulations regarding transportation of workers by all types of conveyances ...

Folklore Enterprises did not own this Rollogon. They had rented it from another contractor in Prince George.Documentation would suggest that this machine was purchased by the present owner in 1990 from the original owner Petro-Canada Resources. It appears the original owner acquired the machine in 1974.

On the day of this event, it was being driven in an area that had grades of up to 25%. The driver was a 27-year-old male who stated that this was the first time he had driven that particular machine as it had only arrived on site the day before. In addition to the driving duties, this employee indicated he was responsible for ensuring the machine was greased and oiled. He had no knowledge of any maintenance schedule, nor did he know how many people were riding on the machine on the morning of this event.

While driving up the access road, with a 19 to 21% slope, the driver heard a loud bang. It was determined later that the drive chain had broken. This failure allowed the machine to free wheel backwards down slope. The operator applied the brakes. This action had no effect. There was no braking effect on the front or rear drive line and power could not be applied.

The vehicle rolled downhill gaining speed quickly. The operator screamed for his passengers to 'bail out' as there was nothing he could do to stop it. On its downhill course, the passengers either jumped or were thrown off. The machine eventually turned over onto its left side at right angles to the roadway.

Sandusky was not the only one pinned underneath the overturned vehicle. The uphill side of the vehicle was lifted by others present, freeing the people underneath. After being lifted, the machine rolled further down the slope. The victim was seen to rise to his knees. He appeared blue and was obviously injured. He staggered about for a few moments before he collapsed. First Aid people were on site and did attend immediately. The victim was eventually flown to hospital at Chetwynd, arriving at about 0930 hours. On arrival at hospital, signs of life were still present. His condition deteriorated, caregivers were unable to stabilize him and he died in hospital before noon. At autopsy, his death was attributed to severe traumatic injuries to the chest and head.

This machine was subsequently inspected by a qualified mechanic. The inspection was completed near the accident site at kilometre 4 on Dickebusch Creek.

The mechanic confirmed the drive chain was broken which led to the failure of the brake system. The mechanic also noted the only braking system was the parking brake. No other brake system was on the vehicle. The mechanic felt the brake assembly would be adequate on flat ground, not on steep terrain.

Officials from the WCB conducted an investigation into this fatality. On an Inspection Report, the investigator notes that existing regulations require all vehicles used to transport workers be equipped with adequate service brakes.

I believe similar type vehicles are common in the tree planting industry, and are being used to transport workers routinely. Authorities are reviewing the regulations regarding the transportation of workers by all types of conveyances, including off-highway vehicles such as this type or design. Present regulations do state that vehicles without adequate service brakes shall not be used.

In the event other employers are using similar type vehicles to transport workers, I would make the following recommendation pursuant to the Coroners Act.❖

Upcoming WSCA Conference and AGM

Chris Akehurst and Tony Harrison

The 14th annual WSCA Conference and AGM is almost upon us. As in the past two years, courses will be offered in the days prior to the conference.This year, we are offering two completely different types of courses — one set is on the Forest Practices Code and the other is on basic First Aid requirements.

Courses

The Forest Practices Code Training has been developed by a joint industry/ government task force and is a must for anyone running crews in the forests. This course is designed for the owners and supervisory personnel of companies, and will provide them with the ability to train and inform their own employees about the Code.

The second set of courses is more practical in nature, and is being offered as an opportunity to upgrade key employees' skill levels in line with the new WCB First Aid regulations. The WHMIS (Workplace Hazardous Material Information System) workshop is designed for managers and has been customized for our industry.

All courses will be held at the conference site — the Clarion Hotel. To register for WHMIS and WCB First Aid, contact Trauma Tech International Inc. at (604) 874-3913. To register for Forest Practices Code, contact the WSCA Office at (604) 736-8660.

AGM & Conference

This year the format of the Conference and AGM has been changed with the hope of making the meeting more relevant and meaningful to everyone. Experience over the previous years has taught us that we often turn off participation by having too many speakers. As well, the AGM on the second day has been poorly attended and unfocused. Our new format for the Annual Conference and AGM is designed to:

- do away with long, boring speeches
- engage all of us in focussed discussions about the key issues we face
- provide clear directions and plans for the Board to implement during the next year
- keep the formal AGM very brief
- let all of us learn, play and be serious together

This year we have identified four main issues important to all of us. These issues will be discussed in working group sessions on the conference's first day. The four topics are:

1/ Forest Renewal BC;

2/ Human Resources and Training;

3/ WCB Safety; and

4/ MOF Contracts, FWDP, etc.

Each issue or topic will have a facilitator team of two directors whose job is to encourage and direct discussion at each table. They are also responsible for note-taking. There are three working sessions scheduled and each workshop will be available at each session.

This way participants can attend three of the four workshops. The facilitating team will remain with one workshop throughout the three sessions and will prepare a written summary of the discussions after the third session.

These written summaries can be circulated, presented to the Minister and be used as a basis to work with for the "Bear Pit" session. The intent of this format is to bring all contractors up to speed and to get a WSCA consensus before the "Bear Pit" session.

In line with this thinking, the second day of the conference has also been changed. There is a late start (10:30 am) and an easy entry into the second day with a presentation from the Trainers Association, followed by the AGM portion of the meeting, scheduled for *only* 1 hour. The AGM will be short and sweet, and will fulfil the basic legal requirements of an AGM. The President's and the Treasurer's Reports will be circulated prior to the meeting and directors will be elected by mail ballot before the meeting.

"The Bear Pit" session — the highlight of the conference - — is scheduled for Friday after lunch. Run by Philip Ditchburn, the session will raise the issues that will have come up in the Thursday workshops. A high-profile group of representatives, mainly from Forest Renewal BC, will sit on this panel.

This meeting is a chance to talk to and influence the policy makers, to voice concerns about the changes in the industry. Your participation is essential to maintaining the WSCA's credibility in its dialogue with government and industry.

COURSES

Monday, Jan. 30, 1995
2:00 pm to 4:00 pm
WHMIS Workshop Contractors Workshop for WHMIS Compliance Fee: $45

Tuesday, Jan. 31, 1995
8:30 am to 4:30 pm
(a) Forest Practices Code *Awareness Training* Fee: TBA
(b) WCB x Level I First Aid Fee: $70

Wednesday, Feb. 1, 1995
8:30 am to 4:30 pm
(a) Forest Practices Code Awareness TrainingFee: TBA
(b) WCB Transportation Endorsement Fee: $100

...continued from previous page

Conference schedule

Held at the Clarion Hotel (formerly the Burnaby Villa),
4331 Dominion Street, Burnaby, BC

Thursday, February 2, 1995

08:00 - 09:00 Trade show and registration

09:00 - 09:45 Introduction: Keynote speaker Larry Pedersen, Chief Forester *invited*

09:45 - 10:15 Coffee/trade show

10:15 - 11:15 Session I: Workshops

11:30 - 12:30 Session II: Workshops

12:30 - 02:00 Lunch/trade show/no host bar

02:00 - 03:00 Session III: Workshops

03:00 - 03:30 Coffee/trade show/no host bar

03:30 - 04:15 "Is forest renewal affordable?"

04:15 - 04:45 Trade show/no host bar

04:45 - 06:15 Horizon hospitality suite

06:45 - 09:30 Banquet - Andrew Petter, Minister of Forests *invited*

Friday, February 3, 1995

08:00 - 10:00 Sleep in (run any necessary errands)

10:30 - 11:00 Coffee/donuts

Presentation from Trainers Association (FRTA)

11:00 - 12:00 AGM (formal and brief)

Approval of President's and Treasurer's Reports (previously circulated)

Announcement of new directors (elected by mail before meeting)

12:00 - 01:00 Lunch

01:00 - 03:30 Bear pit hosted by Philip Ditchburn

Focus on forest renewal, training, MOF and safety

Panel includes representatives from industry, the MOF, the IWA, forest renewal, training, and community

...continued from page 44

The staggering number of hectares burned in the 1980s is due to the fact that five of the hottest years in recorded history occurred in that decade, producing three anomalous fire years in Canada. Those three conflagrations focused in different provinces each time — Alberta 1983, British Columbia 1985, and Manitoba 1988.

The spring of 1994 was the hottest on record in North America. The highest number of fires ever recorded ignited in British Columbia, with 72% from lightening, and 51,000 strikes recorded between August 3 and 5, triggering 1500 fires.

Despite intense fire conditions, only 28,366 hectares burned, well below the ten-year average of 55,000 hectares.

Did British Columbia avoid a repeat massive conversion of its forests into more CO_2 with only a lot of luck and a determined, committed Protections Branch? It would seem so.

To be sure, the British Columbia government's commitment to an aggressive fire-fighting campaign has definitely paid off.

However, the decade is not over and I would assert that more hectares will burn in the 1990s than in the 1980s.❖