

The background of the cover is a photograph of a forest. In the foreground, a person wearing a red jacket, red pants, and a white hard hat stands on a grassy slope. The forest is filled with tall, thin trees, and a thick mist or fog hangs between them, creating a soft, ethereal atmosphere. The lighting is diffused, typical of a misty day.

 CANADIAN
SILVICULTURE

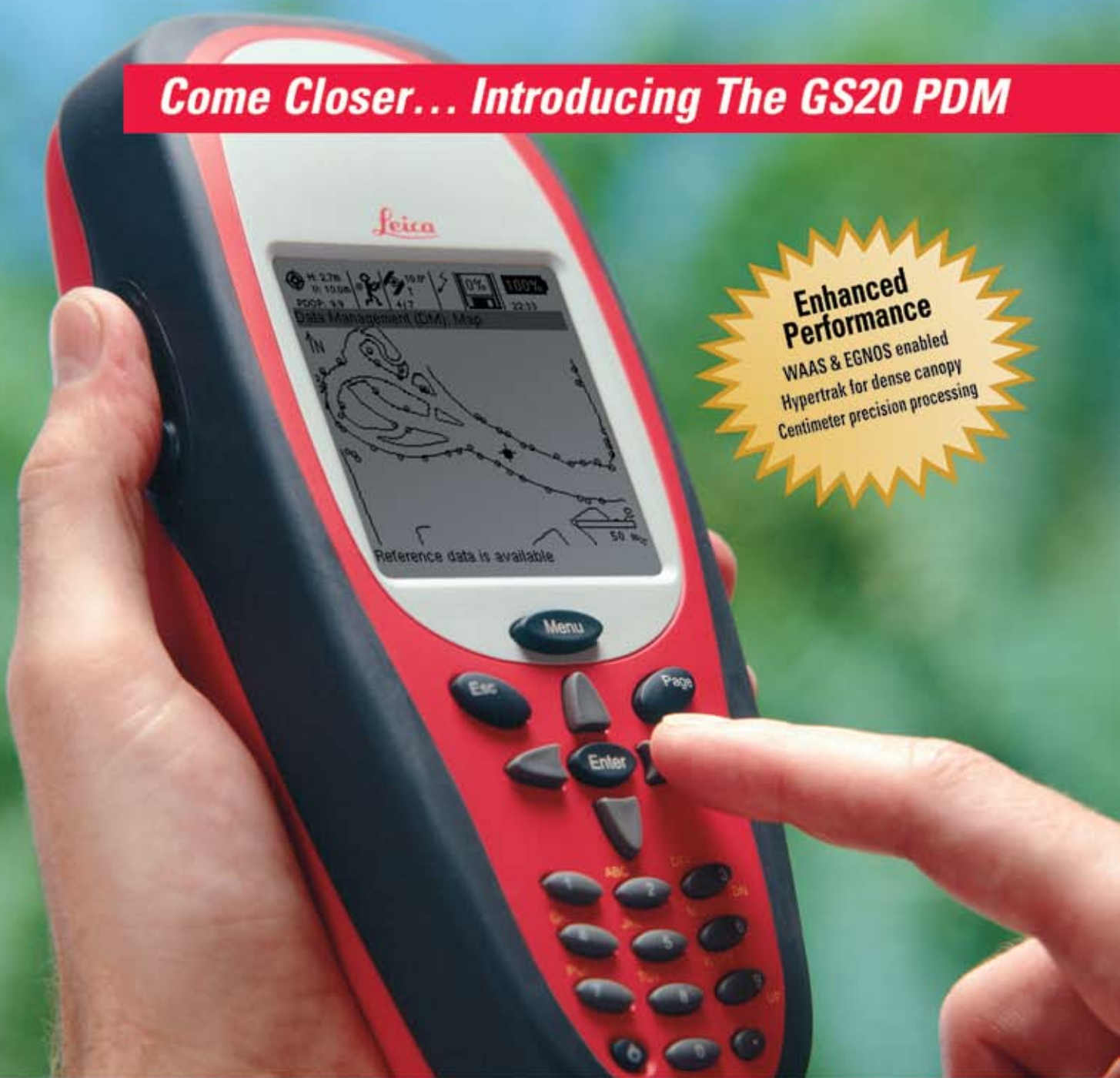
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Ecological restoration work parallels the process of fuel reduction by reducing stem density, manipulating fuels to prevent stand replacement fires, and preserving the cohort of veteran and wildlife trees. Photos by Don Gayton.

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Editorial

by Dirk Brinkman

A Model Forest Nation Challenged

At the fall 2004 World Conservation Conference in Bangkok, Globescan's report on the results of the first ever poll on human's relationship with nature showed Canadians are clear about the importance of protecting our natural forest ecosystems.

Over twenty thousand people were surveyed across twenty countries. More than half identified their number one concern: "the failure to address species loss within twenty years will imperil Earth's ability to sustain life." From a low of 62% (Turkey), Canadians topped the range of the twenty nations sampled, with 94% (Canada) who agreed with the quality of life assertion that "experiencing nature and wildlife is one of the best experiences I can have." Canadians also felt the most empowered; 74% strongly disagreed with the statement that "individuals can do little about the current threat to species and habitat", compared to less than one third of respondents in developing countries.

Another Globescan poll commissioned by the Canadian Boreal Initiative this fall found 89% of Canadians agreed, "it is very important for national identity that Canada be a leader in world environmental issues." Globescan reports an 'uptick' of the environment in ranking the "most important issue facing Canada". Terrorism and the economy were the top priority in 2001. Today it is healthcare, while the economy and the environment are converging for second place.

What do these results mean for forest managers?

The biggest threat to Canada's nature and wildlife experiences are the major effects of climate change on natural forest ecosystems. Forest managers are challenged to make correspondingly major adjustments in their understanding and practices to accommodate future forest impacts.

The Mountain Pine Beetle devastation

and Firestorm 2003 illustrate how severe global warming effects can be. The CFS used the Canadian Regional Fire Model with its spatially explicit large fire database (all fires over 200 hectares from 1959 to 1999) and correlated it to fire indices and weather, confirming the close relationship between fire and climate change. Warmer, drier summers also increase tree stress and vulnerability to pests and disease. Warmer, wetter winters mean more soil saturation, landslides, peak runoff, loss of soil productivity, flooding and siltation of fish bearing streams. Projecting expected climate shifts in the temperate hemisphere over a full forest rotation requires that historic tree species mixes and seed provenances are extended north and to higher elevations. Managers will be creating new forest ecosystems in emerging new biogeoclimatic zones.

Making major changes in forest management practices requires not only a collaborative process to accommodate the interests of all stakeholders across civil society, but a quantum leap forward in delivering on those recommendations. Canada is already ahead of the game in seeking wide input but needs to give the implementation process more teeth.

In most European countries, priorities are set through a National Forest Planning process completed largely by professionals and government. A comparative analysis by two Malaspina instructors showed that Canada's fifth National Forest Strategy 2003-2008 (NFS) is distinguished from national forest planning in other countries by the degree of input in developing the NFS from forest stakeholders representing all aspects of civil society. Its objectives and critical actions closely reflect Canadian consensus.

The first step taken through the National Forest Strategy Implementation Coalition (NFSAC) of implementation through a wide alliance of interest groups needs to be strengthened. Teams are forming

to implement the objectives and actions within each of the eight themes. Members of the Reporting and Accountability team developed a draft set of Performance Indicators for all of the actions in the strategy. Everyone with a vested interest in change management should join the team. Team members and the Performance Indicators are posted at http://nfsc.forest.ca/index_e.htm. The biggest challenge will be developing real Performance Indicators for action item 1.4: Develop a better understanding of the effects of climate change and the Kyoto Protocol commitments on the forest ecosystem and incorporate these into forest policy and forest management planning.

Equally important is developing parallel, provincial level coalitions for adjusting the management of each Canadian forest ecosystem because of regional differences in practices and provincial legislation. The BC Coalition for the Implementation of the National Forest Strategy was formed during 2004 and is an emerging example organization. This coalition was founded, and in part funded, by the McGregor Model Forest. This bold, appropriate initiative leads the way for other model forest programs across Canada.

Canada's Model Forest program of postage stamp-sized, model forests on the Canadian landscape is coming to the completion of its mandate. Now is the time to transform it into a Model Forest program designed to implement change across the whole country by working on model provinces or territories.

Only by including all of the stakeholders of civil society in the changes now required for management practices in each ecosystem and region, and through government and industry giving the implementation of these changes their full support, will Canada remain a Model Forest Nation.



FSC PERSPECTIVES ON PLANTATIONS

by Jim McCarthy

The following article is a summary of the state of an FSC Plantation Review that was initiated earlier this year. It is an attempt to reflect on the current state of debate among FSC stakeholders and other interested parties, provide information, and also enlist others who wish to participate in the debate. Detailed papers and presentations from which this information was drawn, as well as access to the debate, can be found at www.fsc.org/plantations/

Plantation management is a major issue facing the world's forests. The role of plantations and the contributions they are capable of making towards sustainable forest management remains controversial.

The Forest Stewardship Council (FSC) exists to promote environmentally appropriate, socially responsible, and economically viable management of the world's forests. FSC does this through forest management certification in compliance with its principles and criteria for forest stewardship. FSC certification of plantations was intended to provide a means of recognising responsible plantation management. Over 5 million hectares of plantation have been certified under the FSC system, as part of the more than 45 million hectares of FSC certified forest worldwide.

An extensive list of issues concerning plantations have been raised by a diverse group of stakeholders, and in recent years, stakeholders have voiced concerns related to the standards met by FSC certified plantations. After 8 years of certifying plantations against FSC's 10 Principles and Criteria, criticisms persist that Principle 10 on Plantations is ambiguous and open to too wide a range of interpretations.

In response, FSC is conducting a review of its policies and standards for plantation certification in order to address the concerns and issues raised, and to ensure that FSC's system for identifying environmentally appropriate, socially beneficial and economically viable



management of the world's plantations remains effective and credible.

What are the Issues?

The issues are many and the views are diverse! The conclusions reached at the most recent United Nations Forum on Forests (UNFF) intersessional experts meeting on planted forests are indicative of plantations' variability. For example, increased fibre production from smaller areas is seen as a benefit of plantations that can help alleviate pressure on native forests. However, it is also noted

that plantations are no substitute for natural forests, especially where such replacement may adversely affect indigenous peoples who are dependent on the forest for their livelihoods (UNFF 2003).

Attempts to concisely define plantations reveal their variability, and hence one basis for the diversity of issues and views. Currently FSC employs a broad approach by defining plantations as "forest areas lacking most of the principle characteristics and key elements of native ecosystems as defined by FSC-approved

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national and regional standards of forest stewardship, which result from the human activities of either planting, sowing or intensive silvicultural treatments.” While many other definitions exist, to facilitate discussion it would be useful to accept that management purpose and intensity are key factors.

Much debate over plantation forestry concerns plantations’ impact on ecological systems, both pre and post-establishment. Stakeholders have voiced concern regarding biodiversity loss, and disruptions to soil hydrology and nutrient regimes. Issues related to plantations’ effects on adjacent forest areas, and the spread of pests and diseases have also been raised. The use of genetically modified organisms is an issue for some, while others debate the merits of plantations’ ability to sequester carbon and thereby help combat global warming. More than indicating the many challenges facing plantation management, these issues also suggest opportunities for improvement. The extent to which plantations enhance or create social benefits is another dimension of the plantations debate. Much controversy stems from instances where plantation forestry has created or exacerbated social conflict over land use. Important issues concern plantation ownership, its corresponding influence on management outcomes, and the positive or negative consequences for local peoples. Stakeholders have voiced concern over limited opportunities for local employment and poor working conditions.

Impacts on indigenous peoples’ livelihoods, and limited access to land are also important issues. Many of the issues raised reflect increasing social expectations from plantations. Where much discussion has (and still is) focused on the threat plantations pose to livelihoods, culture and communities, stakeholders are increasingly asking how plantations can contribute to the lives of people who live in and amongst them. Many of the aforementioned social and environmental issues relate primarily to industrial plantations driven by economic objectives. The drive to maintain financial viability and increase profit margins has undoubtedly sparked environmental damage and social conflict. However, financial viability is an essential decision criterion for most plantations and economic realities influence management outcomes that ultimately reflect tradeoffs between economic, social and environmental objectives.

In many cases, the economic issues facing plantation managers revolve around balancing the necessity of increasing wood fibre production, with the reality of decreasing land availability for other objectives. Wood product markets are an important factor in this equation, and affect both the establishment and subsequent management of plantations. Simultaneously, governments have a keen interest in fostering economic activity as well as meeting social and environmental objectives. In many cases, governments have played key roles in facilitating plantation industries.

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Plantations Forum

In September 2004, FSC hosted a one-day meeting attended by over 100 people from 30 countries around the world to discuss plantation issues as they impact on FSC Principles and certification. With the above-mentioned issues as a backdrop, discussion among attendees focused on several critical issues:

- Habitat Conversion – range of factors affecting conversion types and decisions, interrelationship between environmental and social impacts, and policies addressing land use allocation
- Conservation and Restoration – interrelationship of intensive management and conservation objectives, need for flexibility and guidance in setting targets, and implications of landscape views, scale and intensity, and land use history.
- Economic Viability – the role of or need for certification of plantations in meeting broader economic objectives
- Social Impacts – particularly the issue of plantation ownership and ability to establish sound indicators of social benefit and performance.
- Operational Issues – chemical usage, harvesting practices and species diversity

Path Forward

FSC's Plantations Review aims to engage social, environmental and economic stakeholders in an international review of FSC's policies and standards for plantation certification. By engaging a wide array of stakeholders, FSC is confident that the

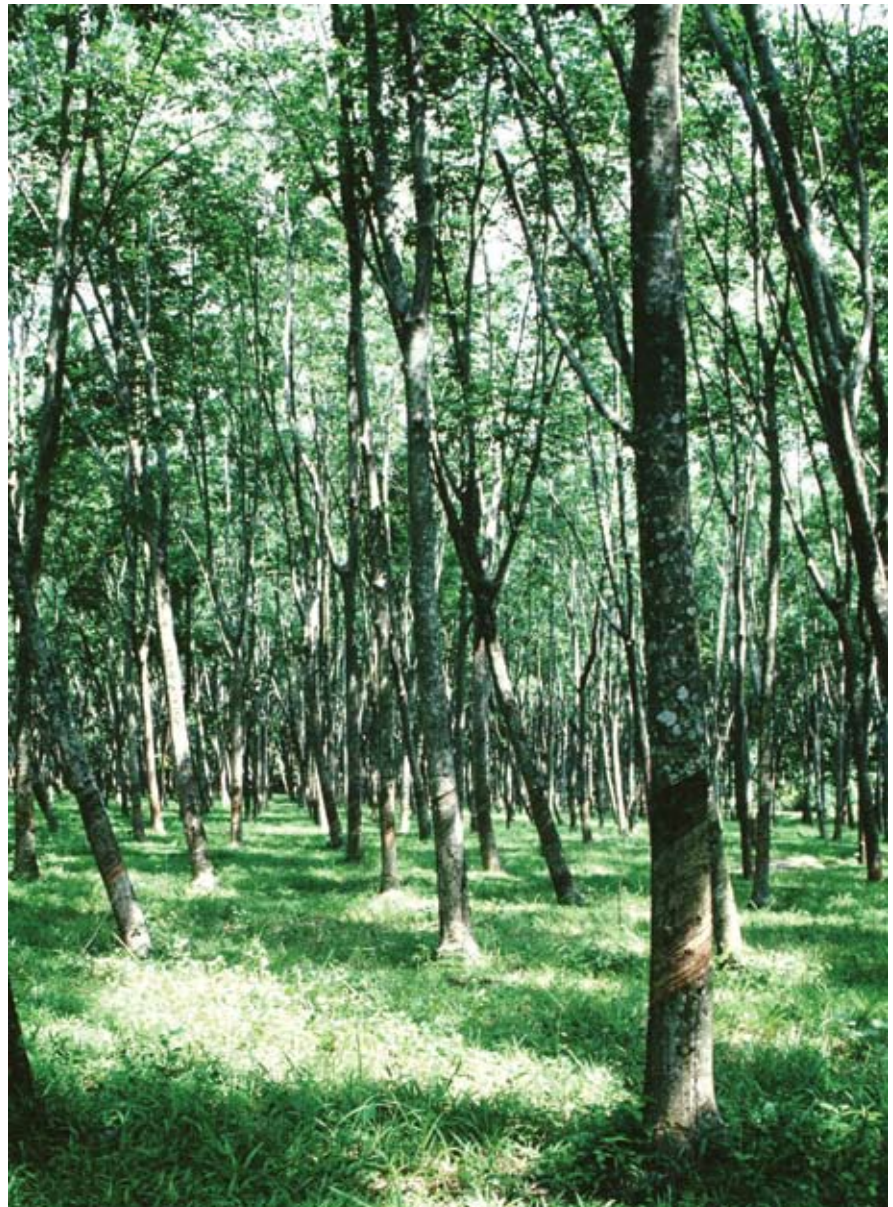
plantation management is a major issue facing the world's forests

outcomes of the review will gain broad support of the FSC membership and the global community.

There is much work yet to be done, and the September Forum was but one key step in this process. A work plan has been developed with an objective of completing a policy review in early 2005, conducting a thorough technical review throughout

2005 and 2006, with approval of technical solutions by the end of 2006.

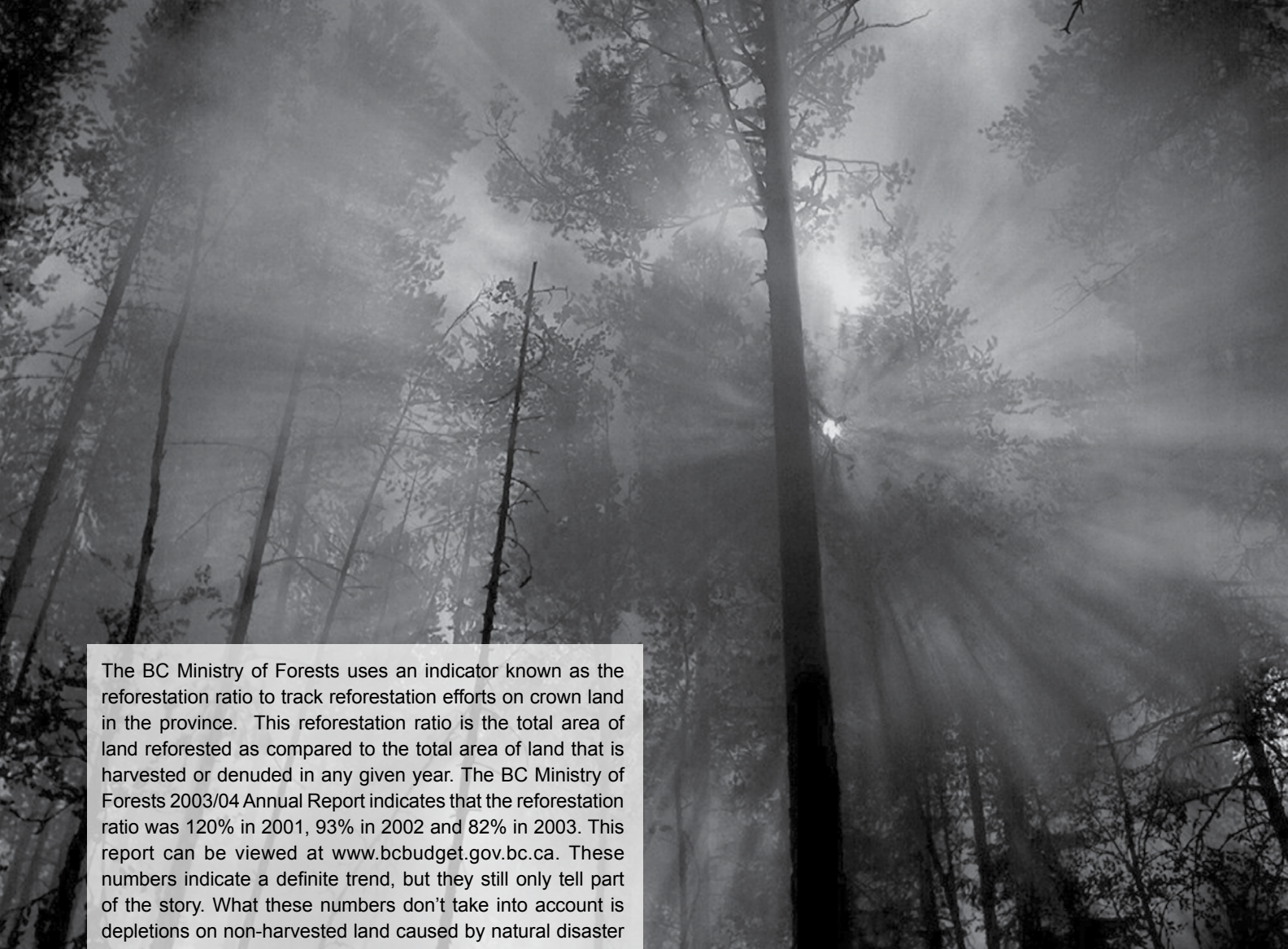
Fundamental to this process will be inclusiveness and transparency, so interested parties are welcome to contact the FSC Plantations Forum Administrator via the website at www.fsc.org/plantations/ ✦





NATURAL DISASTERS
Affecting Forest Land
Problems and Possible Solutions

by Herb Markgraf



The BC Ministry of Forests uses an indicator known as the reforestation ratio to track reforestation efforts on crown land in the province. This reforestation ratio is the total area of land reforested as compared to the total area of land that is harvested or denuded in any given year. The BC Ministry of Forests 2003/04 Annual Report indicates that the reforestation ratio was 120% in 2001, 93% in 2002 and 82% in 2003. This report can be viewed at www.bcbudget.gov.bc.ca. These numbers indicate a definite trend, but they still only tell part of the story. What these numbers don't take into account is depletions on non-harvested land caused by natural disaster such as wildfire or insect devastation.

The level of forestry funding in BC for reforestation due to natural disasters has decreased in recent years. A number of different funding possibilities exist in BC to provide for reforestation of forests destroyed by natural disasters. In the 1990's, FRBC funding for reforestation efforts for these types of occurrences averaged between \$80 and \$130 million per year. This fund was replaced by the Current Fire and Pest Fund, which provided approximately \$2.0 million per in year in restoring forests lost to fire and pests. This program was discontinued and replaced by the Forest Investment Account (FIA), again with a \$2.0 million dollar budget.

The cost of addressing BC lands destroyed by fires and pests has been estimated at \$220 million dollars, and would take a

decade of effort to address. Moreover, damage caused by mountain pine beetle is not completely included in the above calculations. Most would agree that the damage from mountain pine beetle is increasing. If regular harvest activities cannot keep pace with the infestation, these damaged forests will not yield saleable timber, leaving no revenue stream for reforestation efforts. Without treatment or salvage harvest,

these stands represent wildfires just waiting to happen. Setting aside the dangers associated with wildfires, how will these stands be brought back into a productive forest? And where will the funds come from?

The approach in Alberta has yielded the same result as in BC – growing NSR lands. Since almost all of the forest land in Alberta is covered by forest management agreements, the way in which the province deals with forest companies to handle fire and pest incidents determines the state of NSR land. When natural disasters occur in Alberta, forest companies

how will these stands be brought back into a **productive forest?**

are encouraged to salvage harvest the affected forests. When these areas are accessible and the wood is still merchantable, companies can redirect their harvest activities to the affected areas. When this is the case, they may also have these salvage operations excluded from their annual harvest allocations.

In BC, severe fire seasons have occurred over the last few years. This has resulted in forest companies requesting and



being granted relief from salvage and reforestation efforts. The new Forest Practices Code (amended in December 2002) absolves agreement holders from existing free to grow obligations where forests were lost to pests and fire. The Forest and Range Act provides for obligation holders to apply for government funding to reestablish the plantation or relief from their obligation. The Alberta government has recently considered one time funding to reverse the growing NSR trend but has yet to put forward a concrete number or plan. The NSR trend is increasing on crown forests in both Alberta and BC.

Ontario has a different approach to funding and treating forests destroyed by natural disaster. The Ontario Forestry Futures Trust, (OFFT), established in 1995 and managed by the Ontario Ministry of Natural Resources, is essentially a forest industry sponsored insurance fund that all Ontario license holders contribute to and draw from. Sustainable Forest License (SFL) holders contribute \$0.48 per cubic meter harvested to the OFFT, on a monthly basis, along with the regular stumpage charges. In return, they are eligible to apply for relief funding when a natural disaster occurs on their SFL limits.

When a catastrophic event occurs, Ontario SFL holders can make application to the OFFT by way of a proposal to

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based on their harvest levels

reforest or otherwise restore the affected forest land. Trust participants can also apply for stand management projects to increase the growth and yield of forested stands affected by natural disaster at

any point in the past. The committee managing the trust meets regularly to review applications, make determinations, and prioritize projects for renewal. The committee may recommend full funding,

joint funding with the applicant, request further supporting information or reject the application altogether. If the application is approved, the SFL holder will then complete the work, report back to the committee on progress and milestones achieved, and receive funding based on demonstrated performance.

The key advantages in the Ontario approach are:

1. SFL holders contribute proportionally based on their harvest levels to a common pool of funds. This ensures everyone contributes based on usage.
2. Contributed funds are held in trust and may only be used for the agreed upon purpose; treating naturally damaged, underperforming or destroyed stands.
3. The funds are available to all contributors and are disbursed based on need by an arms length committee representing the interests of the forest and the public.

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Forest devastation due to Mountain Pine Beetles



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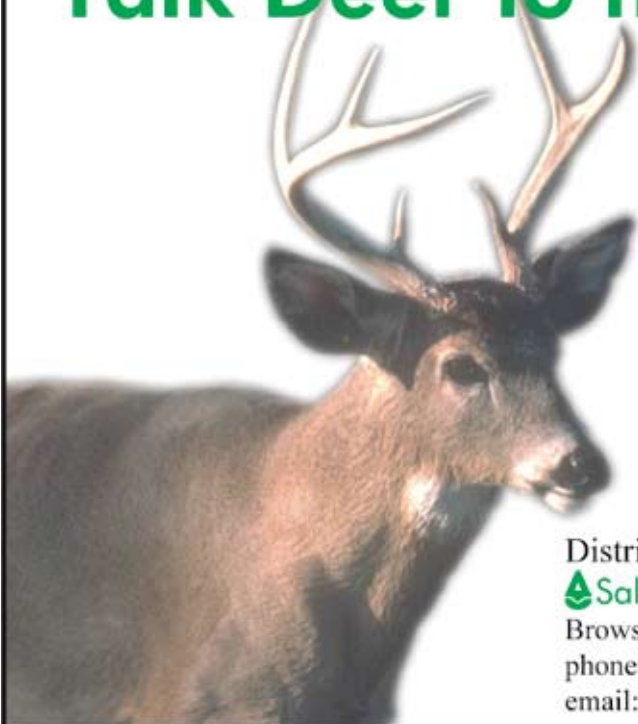

A worker takes a bark sample to test for Mountain Pine Beetle infestation

In the most recent Annual Report for the 2002/03 year, the Trust reported that they had approved 39 projects out of 44 that were submitted. These projects received funds from the Trust totaling over \$18 million. This amount was split into projects destined for stand improvement (\$12 million), under performing stands, and \$6 million was allocated for remediation for areas affected by recent natural catastrophes.

BC has some serious challenges ahead; not the least of which is the mountain pine beetle infestation. Meeting these challenges will require a long-term plan, not just a program. If BC is serious about protecting the long-term productivity of its forests, a system is required that effectively meets each new challenge as it presents itself. Resources are needed to protect the viability of forests and those who depend upon them. The Ontario approach may provide a solution for natural disasters occurring on harvested land. ✦

Herb Markgraf is Vice President, Business Development with PRT and can be reached at 604-687-1404 or herb.markgraf@prtgroup.com

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Forest Health

by Sunil Ranasinghe

Mountain Pine Beetle in Alberta

The mountain pine beetle (MPB) is the most serious pest of pines in western Canada. Mass attacks by these small insects (4.0 – 7.5 mm long), aided by blue stain fungi associated with them, can kill mature pine trees within a few weeks.

The last MPB outbreak in the province occurred from 1977 – 1985 in southwestern Alberta and killed over one million cubic metres of mature pines.

The natural range of MPB extends from Pacific Coast east to South Dakota and from northern British Columbia and western Alberta south to northwestern Mexico. The fringe area of its distribution covers eastern slopes of the Rockies in Alberta thus leaving most of the province outside its natural range. However, during the current outbreak MPB attacks in Alberta have been detected further north than ever before thus indicating a possible expansion of its range.

Although all pine species are susceptible to MPB attacks, the lodgepole pine is the preferred host in Alberta; white bark and

limber pines are also attacked. Natural attacks have not been reported on jack pine, which is a potential host.



Mountain Pine Beetle damage near Waterton Lakes

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Current MPB Infestations in Alberta

The detection of about a dozen MPB-killed trees in Banff National Park in 1998 was the first indication of the current infestation in Alberta. Since then the number of MPB-killed trees in this park increased exponentially until Parks Canada's habitat management projects curtailed MPB activity. In 2001, MPB-killed trees were detected in Willmore Wilderness Park. In 2002, MPB infestation in Banff National Park spilled over to the adjoining provincial Crown land near Canmore. Over 1000 MPB-attacked trees were detected during the ground surveys carried out in and around the Town of Canmore in 2002. Subsequently MPB-killed trees were detected in Jasper National Park as well. Following aggressive control action taken by Alberta Sustainable Resource Development in collaboration with Parks Canada, Alberta Community Development (provincial parks) and other stakeholders, the number of new MPB attacks on the provincial land has been significantly reduced.

The mature/overmature component of Alberta's pine forests has increased substantially in the recent past partly in response to more effective wildfire management. With over 230 million cubic metres of mature and overmature pines with an estimated commercial value of 23 billion dollars along the eastern slopes alone, the stakes of a devastating MPB infestation are very high in Alberta.

MPB Management in Alberta

MPB infestations need three components—beetle, suitable hosts and favourable weather conditions—to succeed. Out of these, beetle and suitable host availability are the two components that can be manipulated to manage MPB infestations.

The MPB management program in Alberta is composed of prevention, avoidance and control of beetle populations.

Ministerial orders are used to prevent infested pinewood being transported between June 1 and September 30 into Alberta from areas with current MPB infestations. This makes sense in view of the majority of pines in the province having evolved without exposure to the beetle.

Silvicultural means can play a key role to avoid MPB infestations in mature pine stands. On a short-term basis, thinning to a 5 m X 5 m density will enable mature stands to avoid MPB infestations. Harvest sequencing can be used to prioritize removal of stands with high MPB hazard identified by prediction models. On a long-term basis, creating mixed-species or mixed-age pine stands help to mitigate MPB concerns.

If infestations occur in spite of the preventative measures an aggressive, integrated MPB control program is used. This program includes surveys for detection and monitoring followed by assessment of risk of spread, hazard of infestations and potential impact on timber supply. Once the assessment is complete control strategies either directed toward reducing beetle populations or minimizing potential losses are identified. The main objective of this control program is to tackle the MPB populations at an incipient stage, i.e., transition period before the increasing MPB populations reach the epidemic phase. To achieve this, a goal has been set to detect and control 100% of the new infestations in the first year of occurrence.

Aerial surveys over the landscape are used to detect MPB-attacked trees with ominous signs of red crowns. These red trees although already dead and not harbouring the beetles any more indicate the areas with suspected MPB infestations. Areas with suspected attacks are ground surveyed to detect green attack trees that have not yet change crown colour but harbour life stages of beetles. These green attack trees are removed before beetle emergence to manage the MPB populations. Models have been developed to predict the MPB dispersal and spread over the landscape.

To date this aggressive approach of detecting and removing beetle-infested trees during the incipient stage of the populations has kept the MPB at bay in Alberta. However, with the potential for a continuous influx of beetles from infested stands in adjoining areas vigilance and prompt action are of the essence to prevent another MPB epidemic in Alberta.

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SILVICULTURAL CONTRACTORS' ASSOCIATION

by John Betts, Executive Director

Adopt an MLA, It Can't Hurt

For the past eight years, as the WSCA executive director, I have been in the business of trying to influence government. And after all that time I have to admit candidly that I am little the wiser as to what it takes to turn the wheels of policy. This is not to say that my tenure has not been without some success in this arena. But that only adds to the mystery. There is little proof that the WSCA has been a direct agent of history or even a catalyst in the unfolding of events, particularly those that have run in our favour. In some cases, it looks more like being a beneficiary of circumstance; some idea's time had come and it just happened to be one of ours.

I am not alone in this discomfiture. Speaking to a major American forestry conference in 2003, a well-known U.S. senator characterized Capitol Hill as "a 17 square mile logic-free zone." I have heard the same closer to home. Years ago when the Honourable Tom Waterland was the Sacred Minister of Forests we asked him why it was so difficult for government to appreciate the value of investing public dollars in reforestation. At the time, his government was considering funding a dubious, high profile mega gas project, that would have

kept the forest industry in trees for some time. He replied frankly, "Government doesn't work in a way that you would think is logical. From the inside (of government) things look different."

Since that conversation, I have had little reason to differ with the Minister. And in a way, that has only increased my fascination with how the levers of power are worked. It seems even those we elect, those who we imagine are the direct instruments of the public will, are just as baffled by the process as the rest of us.

Recently I spoke with a well-known former NDP cabinet minister who gave one of the most insightful accounts of how those inside government see things. "Everyone is buried in a blizzard of information; most of which, including the good stuff, is half bullshit," he said. Still the elected recipients know that there is something to the information and it concerns them. But how do they tell the difference? "Eventually it boils down to this. If the information comes from someone you trust then the information has credence and it registers. If there is a face you can trust attached to the information, then you go with it."

But there is a contradiction built into this, of course. If the faces attached to

the information are part of "a machine" (in other words, a rote exercise in lobbying including a routine repetition of the information delivered in person, but automatically) then the attempt fades into the background noise of information. For it to work, the face delivering the information has to have some authenticity. The person has to be themselves and not the information.

I think the silvicultural contracting community is well suited to this approach. Forestry is honest work. And most contractors are honest brokers for the policy issues we face and that government needs to act on. We have never suffered from being over-rehearsed when it comes to lobbying, so there is little chance of appearing as a machine out to manipulate government. Contractors just have to be themselves when they meet an MLA. By describing their own businesses and their attachment to the community, they can establish the trust. After that, the information can take root.

This year the WSCA will begin its adopt an MLA program which will put our faces in front of the information, and we hope will effect some action on forestry issues. It can't hurt. And I think the MLAs would appreciate the help as they sort out all the issues coming their way.

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ONTARIO

FOREST RENEWAL CO-OPERATIVE INC.

by William F. Murphy, RPF General Manager



For the past couple of years, growers in northwestern Ontario have been pursuing new box configuration and materials. Now that there have been several years of experience with the different boxes, it was felt it was time to re-group and discuss the pros and cons of the different box types. This December, a group of silviculture contractors, tree seedling growers and a Sustainable Forest Licensee sat together to do just that.

The growers presented the type of box/tote they use and the benefits of each. In turn, the contractors gave their impression on cardboard vs. hard walled totes. Aspects such as durability, nesting, and weight came into play when assessing a box type.

Weight of a loaded box is a factor because WSIB has a 50-pound maximum weight limitation that can be handled by one person. The variability in cardboard box sizes was minimal, but each grower packs their trees differently depending on the size of the stock. There are usually less trees packed in the hard walled totes than in the boxes, if the sidewalls have flared sides.

Planting contractors felt that non-waxed cardboard boxes should be eliminated because they absorb moisture and can fall apart.

Stacking of the totes and boxes was discussed and one grower indicated that because his totes have lids that close, there is no problem with weight. They can be stacked 8 high since they can withstand 400 pounds of weight. Another grower indicated that cross stacking cardboard boxes puts only 1/4 pound per square inch on the top of each box, if stacked 6 high, which is normally how high they stack into reefers.

Another concern was the nesting of the totes. The contractors preferred the nested totes (flared) to the straight sided. This is because they take up less room to ship back. Some growers were paying a bonus to have their totes/boxes returned while others were charging for non-returned totes.

There was discussion on moving seedlings into inaccessible areas. Most of the contractors prefer the totes, even though they slide on the quad. The boxes have to be tied down with straps, which can damage the boxes and also the trees. The contractors do not want to have to redesign their off-road vehicles to compensate for the various types of boxes/totes that they put on their quads.

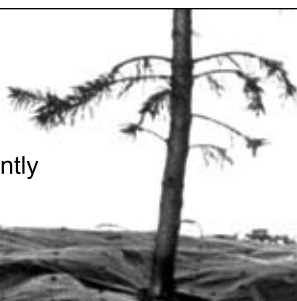
The idea of standardizing boxes was re-visited, but there was also a discussion on the fact that one size does not fit for all projects. Frequency of turn-around at the nursery, and projects with access challenges were factors affecting the need for different boxes and box structures.

In the end, it came down to this. The contractor who is moving the seedlings wants to keep his cost down. The main concern is the increase in transportation cost. Contractors need to know which box/tote type that they are going to be receiving, and more importantly, how many seedlings are expected to be in each. As always, communication seems to be a crucial component to the success of the tree plant.

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QUÉBEC

ASSOCIATION DES ENTREPRENEURS DE TRAVAUX SYLVICOLES

par Marie-Andrée Mill, Responsable des communications

Rapport de la Commission Coulombe

Le 14 décembre dernier, la Commission d'étude sur la gestion de la forêt publique québécoise a rendu public son rapport. Après un an de consultation auprès de tous les intervenants du milieu forestier de la province, le rapport de 307 pages a eu l'effet d'une bombe dans les régions ressources du Québec. La Commission recommande au Gouvernement du Québec de s'engager dans un grand virage et d'apporter rapidement des changements majeurs à la gestion de ses forêts. Bien que la situation ne soit pas encore catastrophique, d'importantes modifications doivent être mises en place.

Ce rapport laisse supposer de grands bouleversements dans l'ensemble de l'industrie forestière du Québec. Toutefois, certains points jouent en faveur des entrepreneurs sylvicoles québécois. Entre autres, la Commission recommande de réduire de 20 % l'attribution des volumes de droits de coupe. Alors que l'industrie forestière québécoise craint que cette recommandation provoque des retombées socio-économiques désastreuses pour les régions, les entrepreneurs sylvicoles constatent pour leur part que la Commission conseille au gouvernement de recourir à l'intensification de l'aménagement des

forêts pour atténuer les effets négatifs et maintenir le niveau de récolte dans les régions. Il s'agit là d'une solution concrète dont l'AETSQ se réjouit puisqu'elle soutient l'argumentaire invoqué par l'association depuis quelques années déjà.

Une autre proposition du rapport vient donner un appui majeur à l'AETSQ, cette fois-ci dans le dossier de l'abolition de la grille de taux pour l'établissement de la valeur des traitements sylvicoles. En effet, la Commission soutient la position de notre association en mentionnant au ministre que le recours au libre marché est une « option risquée » dans le contexte actuel. Il recommande plutôt au gouvernement de prendre le temps de mettre en place les éléments nécessaires à l'obtention d'un environnement concurrentiel juste et équitable. Si vous vous référez à l'article paru dans le numéro précédent, vous comprendrez que les entrepreneurs sylvicoles québécois sont très satisfaits d'une telle déclaration.

La Commission a également recommandé que soit rendue obligatoire l'accréditation des compétences des entreprises sylvicoles pour l'exécution de travaux sur les terres du domaine public. L'AETSQ, qui travaille à ce projet depuis près de deux ans déjà, reçoit enfin l'appui

nécessaire pour permettre la mise en place d'un système qui obligera les entreprises sylvicoles québécoises à se conformer à des critères précis pour obtenir une certification qui leur sera essentielle pour œuvrer dans l'industrie.

Enfin, sur les 81 recommandations formulées par la Commission, celle qui aura le plus gros impact réside dans la création d'un poste de forestier en chef. Cette personne, relevant du ministre des Ressources naturelles et soumis régulièrement à des audits auprès du vérificateur général du Québec, serait notamment responsable du calcul de la possibilité forestière. Cette mesure vise entre autres à assurer une plus grande transparence et à rétablir le lien de confiance entre la population et les instances responsables de la gestion des forêts.

Le ministre délégué aux Forêts a promis que l'imposant document ne mourrait pas sur les tablettes et il s'est engagé à mettre sur pied, dès janvier 2005, un comité de mise en œuvre du rapport de la Commission. Le rapport complet de la Commission est disponible sur le site Internet www.commission-foret.qc.ca.

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QUEBEC

TRANSLATION

by Marie-Andrée Mill, Communications Co-ordinator

Report of the Coulombe Commission

Last December 14, the Commission to Study the Management of Public Forests in Quebec released its report. After a year of consultations with all the stakeholders in the forest environment in the province, this 307-page report burst like a bomb in the resource regions of Quebec. The Commission recommends that the government of Quebec commit to alter its approach completely and to make major and rapid changes in the management of its forests. Although the situation is not yet catastrophic, important modifications must be implemented.

The report foresees large-scale revisions in the entire Quebec forest industry. Certain recommendations, however, favour Quebec silvicultural contractors. For example, the Commission recommends a 20% reduction in the volume of cutting permits. Whereas the Quebec forest industry fears that this recommendation may have disastrous socio-economic effects in the regions, the forest contractors, for their part, note that the Commission is advising the government to attempt a more intensive management of its forests, in order to reduce negative impact and maintain regional harvest levels.

This is a concrete solution that the

AETSQ welcomes, because it underlines the arguments the association has been putting forward for several years.

Another recommendation of the report gives major support to the AETSQ in the matter of abolishing the rate schedule that determines the value of silvicultural work. The Commission actually supports our association's position by pointing out to the minister that recourse to a free market is a "dangerous option" in the present context. It proposes instead that the government take the time to put in place the elements required to create a fair and equitable competitive environment. If you refer to the article published in our previous issue, you will understand that Quebec forestry contractors are well pleased with such a statement.

The Commission also recommended mandatory accreditation of the competence of silvicultural companies involved in forestry management of public lands. The AETSQ, which has been working on this project for nearly two years, is finally receiving needed backing to allow the implementation of a system that will oblige Quebec forestry companies to meet precise criteria in order to obtain the necessary certification to work in the industry.

Finally, out of the 81 recommendations formulated by the Commission, the one that will have the greatest impact is the creation of the post of Chief Forester. This official, reporting to the Minister of Natural Resources and subject to regular audits by the Auditor General of Quebec, would have among his responsibilities the calculation of forestry yields. This measure and others are designed to assure greater transparency and to rebuild confidence between the population at large and the agencies responsible for forest management.

The Minister in charge of forests has promised that this impressive document will not gather dust and has undertaken to establish, not later than January 2005, a committee to implement the report of the Commission. The full report can be read at www.commission-foret.qc.ca



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NEW BRUNSWICK

AGFOR REPORT

by Gaston Damecour

The Speech from the Throne

The Select Committee on Wood Supply believes that the public forest should be managed in accordance with public values, and that balance and compromise are essential. The Lord Government recently sent some positive signals in the Speech from the Throne:

- Government will establish quantifiable wood supply objectives; and
- Will provide sustainable silviculture funding to meet five-year objectives.

These are good signals in time for Christmas. How the two announcements will be implemented should temper (not dampen) our enthusiasm.

The quantifiable wood supply objectives will need to be incorporated in the Provincial Vision Document for the next round of forest management plans – 2012! Crown land wood supply objectives will require our government to determine where “we want to be” after a careful review of the forest sector, its outlook on markets, and opportunities in relation to other objectives and forest attributes.

The relationship of Crown resources to other values and objectives requires balance. The first element was the forest industry’s public information campaign that accompanied the JPMC Report. Industry’s two themes are appropriately “good science” and finance.

The other elements are socio-economics and conservation. Socio-economics is an important part of Crown timber allocations and is regaining prominence with successive recent reductions in employment. One pulp mill is closed and another will close in January. The Forest Products Association estimates that at least 1,000 jobs will be lost in 2005 in addition to the 1,600 lost in 2004.

The conservation movement has prominence in the media and in government policy. The Province has established 30 Protected Natural Areas with 12 advisory committees who will have direct access to the government.

There are important wood supply analyses of the private woodlot component – over 30% of the provincial wood supply. There are discussions around the primary source of supply status for private wood with DNR and the Forest Products Association. Is this a lead-in to private wood supply objectives?

The sustainable silviculture funding to meet five-year forest management objectives is good news for Crown land contractors, who have seen funding cut when government budgets are tightened. This can cause a reduction in the productive capacity of the business, as well as a loss of staff and skilled workers.


The commitment to complete the five-year silviculture program using a dedicated silviculture fund is a Select Committee recommendation. Government would seek to have an annual budget to level the commitment over five years. This commitment can be implemented for the 2007-2012 five-year period or sooner (with important investments in rural roads announced).

Given the province’s discussions on wood supply and primary source of supply, with the New Brunswick Federation of Woodlot Owners, are private woodlots likely to benefit from a commitment to funding? Stay tuned...

Gaston Damecour is a registered professional forester. He is a senior consultant and principal of AGFOR and has been instrumental in bringing about significant changes in the forest sector by representing governments and industries on such issues as health and safety, standards for forestry equipment, industrial relations, wood allocations and forest management policy.

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PEI

FOREST IMPROVEMENT ASSOCIATION

by Wanson Hemphill, Manager

Frozen ground, cold days and slippery roads signal winter on PEI and time for meetings, discussions and planning on PEI forest future. The new 41-page Forestry Policy Discussion Paper provides background on 6 Critical Issues and asks what the role and policy of Government should be in each area. Province-wide meetings are planned and much discussion is expected over the winter.

Given the 87% private forest ownership and the independent nature of Islanders on land rights, regulations on harvesting activities will be a hard sell. However, there seems to be significant public opinion supporting the reduction of clearcutting and encouraging the conservation of forests for clean water and air. The 6 Critical Issues include Public Lands; Forests on Unploughed Lands; Quality of Life; Education and Training; Plantations and Planting; and Forest Products. The Discussion paper is available at www.gov.pe.ca by typing Forest Policy in the Search.

Forest Certification has finally arrived on PEI with the first four forest certifications under Nagaya Forest Restoration, a

resource manager for Forest Stewardship Council. Other certification of forest contractors, including Sustainable Forestry Initiative (SFI), are moving ahead with some notices from the marketplace on upcoming requirements for market access. A conference on Certification is planned for this winter by the PEI Model Forest Network Partnership Ltd.

Firewood sales are very strong this year due to increasing oil prices. The message of environmentally-friendly wood combustion is being clouded by the burning of green wood, increasing fire insurance issues and the smoke of improper combustion techniques. A Safe Woodburning Workshop is being planned for January to bring together homeowners, insurance companies, the Fire Marshall, wood stove installers, and firewood suppliers for discussion, planning and coordination.

Kyoto Protocol is back on track thanks to Russia signing on to include more than 55% world support. This means that Canada and its major polluters will have to agree to expensive emission reduction schedules by 2008 and complete by

2012. Capping Canada's emissions at 5.2% below 1990 levels or 572 million tonnes/year with emissions already at 727 million tonnes/year in 2000 and rising will require immediate government and industry action. Will Governments impose energy consumption taxes, encourage more energy efficiency and tree planting or wait until after the next election? Emission credits are now estimated at US \$7-8/tonne.

Huge Workers Compensation rate increases are planned for 2005 for 11 rate groups including 65 industry occupations. Rate increases up to 19% will be double-slammed with the change in experience rating from plus or minus 25% plus 50% or minus 25%. Forest rates could increase to \$16.21/\$100 payroll for a company with high injury claims. Will the move towards a user-pay system and away from a collective liability system improve prevention of injuries or simply benefit large companies with prevention staff and programs?

All in all, it looks like a busy winter for those people in the forest information business.



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Report on Safety

by John Levesque

Hazardous Materials In Tree Planting



The Workplace Hazardous Materials Information System (WHMIS) was created to address Canadian workers' right to know about health and safety hazards associated with the materials or chemicals they use at work. WHMIS places clear and detailed responsibilities on manufacturers and suppliers of hazardous materials, as well as on employers and employees who purchase and use these controlled products.

Pesticides

Tree planters have the right to know if the ground they're working has been sprayed with a pesticide of any kind,

whether it's a fungicide, herbicide or insecticide. Employers are responsible for telling planters if seedlings have been treated with a pesticide and providing a Material Safety Data Sheet (MSDS) on the substance, if asked for it. The name of the pesticide must be given, along with the date of the last chemical application.

To deal safely with pesticide-treated seedlings, planters should always wear gloves, long sleeves, long pants and boots that cover their ankles. Gloves should be removed and hands thoroughly washed before going to the bathroom, eating or smoking.

Fertilizers

Tree planters are exposed to fertilizers used to minimize the amount of planting stock required and to maximize the growth of seedlings. Exposure to two fertilizer ingredients in particular—macronutrients such as urea and heavy metals such as cadmium—creates potential health hazards for planters.

Exposure to fertilizers in general can be reduced by wearing gloves, using dust masks when appropriate, and making it as easy as possible for planters to wash off potentially harmful substances. Using fertilizers that are low in cadmium and dust levels also reduces the risk to planters.

Insect repellent and DEET

DEET (diethyl-m-toluamide) is a broad-spectrum insect repellent developed by the U.S. government in the 1940s and used today in most commercial repellents. DEET is widely regarded as safe when used as instructed.

Health Canada recommends the following steps when using insect repellent:

- Apply the repellent sparingly and only on exposed skin surfaces or on top of clothing. Repeat applications only as necessary and according to label directions.
- Do not use the repellent on open wounds or skin that is irritated or sunburned.
- Wash treated skin with soap and water when protection is no longer required.

Smoke, charcoal and soot

Tree planters sometimes have to work in forest areas that have been burned by natural fires or prescribed burns. Smoke, charcoal, soot, dust and other elements in burned areas are known to contain carcinogens, so precautions must be taken before entering and working in such areas.

Burned areas should be planted only after a substantial rain has doused any remaining hot spots and washed down fine, light materials that could otherwise become airborne.

Fuels, lubricants and cleansers

In the course of their daily work, tree planters are exposed to other hazardous materials such as diesel fuel, gasoline and propane, engine oil, hydraulic fluid, bleaches, soaps and degreasers. Employers have a legal responsibility to instruct and train workers in the safe use, handling, storage and transportation of these materials, and workers have a legal responsibility to work safely with them.

The Ontario Forestry Safe Workplace Association (OFSWA) recently launched SafePlanting.com, a comprehensive online health and safety training course for tree planters. For more information about the program, contact OFSWA at 705-474-7233 or info@ofswa.on.ca.

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Fuel Reduction & Ecological Restoration

by Don Gayton, M.Sc., P.Ag

There are many ways to look at a forest.
Some see board feet, others see beauty.
But until the fire-scarred summer of 2003 in BC,
few people looked at forests and saw fuel.

several decades of highly successful
fire suppression has resulted in
high fuel accumulations

That summer's series of devastating fires has triggered a re-examination of the wildland-urban interface forests of BC's Southern Interior, from a fuels perspective. The fuel coin has two sides: the amount on the ground, and aerial fuels in the form of live and standing dead trees. Although they are measured differently, ground and aerial fuels become inseparable during the reality of a forest fire.

There is a growing awareness that several decades of highly successful fire suppression has resulted in high fuel accumulations in the historically fire-maintained, dry forest types of the Southern Interior. By going back to some simple biological principles, we can understand how this process works. In dry pine-fir forests, the rate of ground fuel accumulation in the form of dead needles, branches and trees, exceeds the rate at which bugs and microbes can break them down into less flammable

soil humus. In addition, the rate of tree regeneration actually exceeds what dry forest sites can support, over the long term. Historically, both processes were brought into ecological balance by that

great equalizer - fire. Paradoxically, fire makes dry forests more fireproof by consuming fuels, thinning the stand, and reducing fuel continuity.

Obviously, weather plays a major role in



Burning to reduce stem density and fuel loading, Rocky Mountain Trench.



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the severity and extent of forest fires, and BC's summer of 2003 was abnormally hot. But the contribution of long-term fuel accumulation is undeniable. The collision of high fuel loading with a hot dry summer produces the extreme fire behaviors that make these conflagrations difficult and dangerous to fight.

At the forefront of the re-examination of the forest fuels issue are forestry consultant Bruce Blackwell and fire ecologist Bob Gray. Together with Brad Hawkes of Forestry Canada, they completed an epic examination of the forests of the Southern Interior, documenting historical (pre-European contact) fire regimes and the current extent of departure from those fire regimes. A highly simplified example explains the nature of their work: if an area is found to have a historical fire return interval of 35 years, and the last fire happened 25 years ago, then that map area was considered "normal" or "non-departed". However, if that same area had not experienced a fire for 50 years, then it was deemed to be "moderately departed". The degree of departure provides a




Before and after views of a thinning and underburning treatment near Eureka, Montana



crude estimate of fuel accumulation. Roughly half of the 11 million hectares surveyed were found to be outside of their historical natural fire return interval. The researchers went on to overlay maps of residential/commercial building density, and identified several "red zones" that combined high levels of building density with forests in a "severely departed condition". Ironically, the Report came out just before the 2003 fire season, and the red zones correctly identified many of the locations of that year's worst urban interface fires. (The Report is available at <http://www.for.gov.bc.ca/hfd/library/FIA/HTML/FIA2003MR125.htm>)

The solution to the issue of fuel accumulation in the dry wildland urban interface is obvious to the silviculturalist: re-introduce fire on a rational and tightly prescribed basis, and create "analogues" to fire in the form of fuel reduction thinnings. Practical experience and research, in areas like the East Kootenays and elsewhere, suggests the most successful approach is an understory thin, to reduce and rearrange fuels, followed a season

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Richard Lepage of Pineland Forest Nursery with a white spruce seedling at Hadashville Manitoba. This Seedling got its start in a Styroblock 77/170 and is just one of over 7 billion Styroblock grown seedlings planted to date.

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or two later by a low-temperature prescribed burn. The thinning primarily targets the younger, pole-sized age classes, which are either scattered or piled. A certain amount of small-diameter, commercial-sized trees are removed during this operation, which helps to offset thinning costs. The subsequent burn then consumes some of the ground fuels and reduces the amount of regeneration.

In a favourable coincidence, ecologists and environmentalists are calling for the restoration of our dry forests, particularly the ponderosa pine types, since they tend to be very diverse ecosystems that are home to a large host of rare and endangered species. This ecological restoration work parallels the process of fuel reduction almost exactly: reduce stem density, manipulate fuels to prevent stand replacement fires, and preserve the cohort of veteran and wildlife trees. This coincidence presents an incredibly strategic opportunity to join forces and make common cause in the dry forests. Timber companies, municipalities, silviculture contractors, environmentalists, naturalist groups, and rural landholders all stand to gain by an enlightened, carefully applied program that marries fuel reduction and ecological restoration in dry forest types along our wildland-urban interface. It is not often that we have the opportunity to do one thing that is good



A burn-only treatment, near Skookumchuk in the Rocky Mountain Trench.

for both public safety and pileated woodpeckers.

A number of hurdles must be overcome before fuel reduction/ecological restoration treatments become a widespread reality.

- The treatments can be expensive. From the very little bit of real-world data that we have, the cost of a full-on fuel reduction treatment can range from near breakeven to \$3000, or even \$4000, per hectare. We need a series of carefully monitored fuel reduction/ecosystem restoration operational trials to track treatment efficacy and discover ways to bring treatment costs down.
 - A number of administrative hurdles stand in the way of efficient, low cost treatment, including stumping, cruising costs, and restocking standards. Senior governments are reluctant to get involved in funding fuel reduction/restoration.
 - The small-diameter, “junk” wood that fuel reduction/ecological restoration treatments produce has little commercial value and few markets. The looming mountain pine beetle crisis will produce an additional flood of similar wood. New and innovative uses for smallwood need to be developed.
 - Not a lot is known about fuel reduction treatments, and few people are currently qualified to assess fuels and write cost-effective, sustainable treatment prescriptions. We are still largely in the dark about the relationship between fuel and coarse woody debris levels. A good deal more research, training and extension is required to fill this knowledge gap.
- The silvicultural community has much to offer as well as much to gain in meeting the fuel reduction/ecological restoration challenge. And to their credit, they are already actively involved. But meanwhile, out in the dry interface forests of the Southern Interior, the fuel clock keeps on ticking. ❖

Don Gayton is an Ecosystem Management Specialist with FORREX, (www.forrex.org) based in Nelson.



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BC's MOUNTAIN PINE BEETLE EPIDEMIC

TESTING OUR CAPACITY FOR SUSTAINABILITY

by Cindy Pearce

‘Epidemic’, ‘catastrophic’, ‘unrecorded levels’, ‘surpassing previous projections’, ‘will continue largely unabated’ – these words describe the continuing mountain pine beetle outbreak in BC. Beginning in 1994, the epidemic has grown steadily to unprecedented levels in the past 3 years. More concerning is that there is no reason to expect any decline until all of the mature lodgepole pine forests in the province are infested.

A few numbers put the situation into context: about 60% of the 17.4 million hectares available for timber harvesting in the province contain susceptible lodgepole pine trees, stretching from the north central portion of the province, to the southeastern corner; over 10% of the province’s mature timber volume of 10 billion cubic metres is susceptible.

In the most severely impacted areas, between Houston and Quesnel, over 60% of the mature timber volume is lodgepole pine. The infestation in this area doubled between 2002 and 2004, with most recent estimates indicating 2 million hectares, or 160 million cubic metres of the mature lodgepole pine volume (35% of the total) has been killed. Forecasts suggest the infestation will double to about 65% of the mature volume, or 305 million cubic metres by 2010. Since 2002, two ‘uplifts’ to the allowable annual cut have occurred, increasing the harvest level by half, from about 13 million to 19.5 million cubic metres per year – with the province’s chief forester committing to revisit these levels if needed. Even at these levels, significant areas of killed pine forests will remain unharvested.

In the past, sustained cold winter temperatures have stalled such outbreaks. An increase of 2.2 to 2.6C in the average minimum winter temperatures over the past 100 years, makes such a stall unlikely, leading to predictions that the outbreak will continue, peaking in 2007-2008, with virtually all susceptible pine infected by 2020. By that time, the standing lodgepole pine timber volume will be reduced to 0.2 billion cubic metres, from 1.2 billion currently.

Sustainability and silvicultural challenges

An event of this scale challenges the achievement of sustainability across all dimensions. Ecologically, the dieback of large areas



how to avoid future epidemics is under debate

of mature forest combined with salvage harvesting is expected to alter habitat for some wildlife, plant and other species, and change hydrologic regimes – raised water tables have already occurred on some sites, and peak flow increases are expected. Management decisions such as which areas to salvage and how much and which forests to leave as conservation legacies, and how to reforest salvaged areas to avoid future epidemics are under debate and will significantly influence future ecological conditions.

Road management to handle increased water flows and avoid increased human disturbance from expanded access are key to minimizing ecological impacts.

Both short and long-term economic questions abound. Almost immediately, local sawmills invested millions to expand operations to mill the salvaged timber. Much of the attacked timber will not be suitable for the existing sawmills – either because of smaller piece sizes, or the level of deterioration - and are being made available in new licenses for other products.

Initial harvests focused on attempting to control the outbreak, with newly attacked forests containing beetle broods being targeted. The scale of the outbreak and the rate of growth made this strategy largely ineffective, resulting in a shift to salvage harvesting in the past year. Now the question is whether to salvage the oldest attack first, before these trees deteriorate and become unacceptable for some products, or focus on the more recently attacked forests, which produce the highest value products. Which forests to leave to supplement long-term timber supply is also a question – in a forest with an overstory of attacked pine and an immature understory of spruce, is it better to salvage this area now, and promptly

restock with a mix of pine and spruce; or should this forest be bypassed, allowing the immature spruce to release after the pine dies, providing a spruce harvest, perhaps sooner than a new forest?

In the initial stages of this outbreak, the primary beetle management strategy is to harvest patches of newly infested trees, or fall and burn small infested areas to capture and kill beetle broods. In the salvage stages, which predominate in Vanderhoof, Quesnel and some areas around Prince George, silviculturists and forest planners are now consistently designing landscape scale openings of 1,000+ hectares – with many exceeding 5,000 hectares. Identifying which forests to retain for short and long-term ecological, economic and social values is particularly challenging. Though it's clear that retention levels and distribution need to mimic natural disturbance patterns, relevant science is limited for disturbances of this scale. These extensive pine forests are the result of large scale events a century ago, likely prompted by similar pest infestations and natural or human caused wildfire. In anticipation of increased retention to offset the implications of the expanded harvest rate, the provincial Chief Forester incorporated a 20% retention level for salvage harvesting in moderately and heavily infested pine forests – up from the 8% estimated under non-salvage practices, and significantly above the 12% currently practiced. Industry and government foresters are now sorting out how to implement this expectation on the landscape.

Similar questions will arise when expected rehabilitation programs are implemented to reforest productive forestlands that are occupied by dead forests, which are uneconomic to harvest. The increased harvesting and rehabilitation programs

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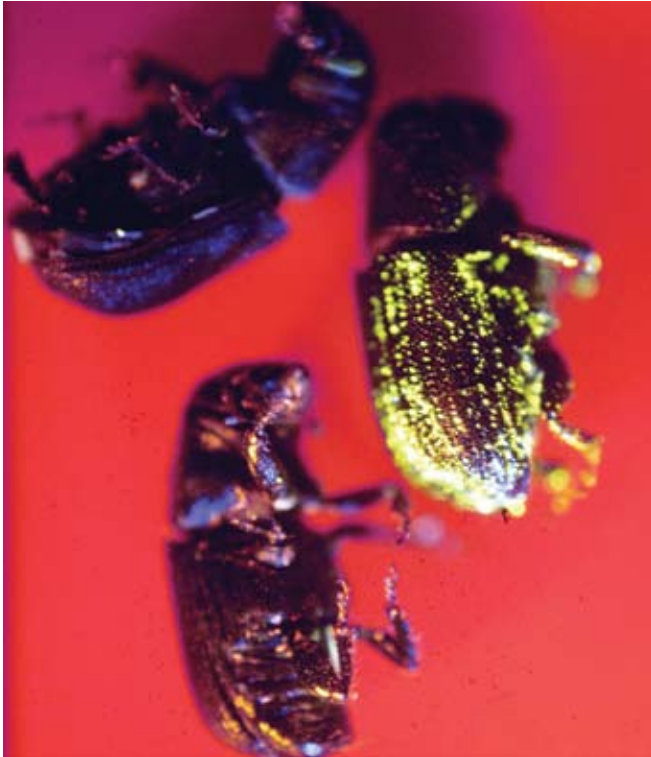
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will necessitate expanded reforestation by both licensees and the government – likely doubling historic programs. Reforestation with non-pine species, mostly spruce, though more expensive, is recommended to avoid the potential for a repeat of the current epidemic. However, mixed species forests will likely develop, given the capacity of lodgepole pine to regenerate naturally. Mixed species forests are not without challenges, as the maturity dates of pine and spruce are different – creating the need to define harvest ages that balance the risk of pine beetle infestation as pine trees age, with the maximum productivity of spruce trees at an older age. In addition, given the generally longer rotation age of spruce, and the need to foster mature volumes as soon as possible to fill the mid-term timber supply gap after salvage harvesting is completed, some pure pine reforestation with early maturity is a wise choice. Further studies are needed to define the best mix of species to balance reforestation/rehabilitation costs, mid and long-term timber supply needs, and pest management goals.

Unusual measures

The scale and unrelentless pace of the infestation, coupled with the relatively short 5 to 10-year ‘shelf-life’ for killed timber will continue to tax the forest sectors’ capacity for strategic thinking and collaborative actions, including planning, research and operations. Unusual measures have been taken by all parties, and more will undoubtedly be needed in the future.

As the land owners, the BC government has taken the lead, beginning in 1999 with the establishment of an Emergency Bark Beetle Task Force. Current actions include appointment of a Minister of State for Forest Operations to lead provincial initiatives, with a Beetle Management Coordinator or ‘Beetle

Boss’ and Director of Economic Diversification to lend support; a Bark Beetle Regulation under the Forest Act which allows for designation of ‘emergency bark beetle management units’; an annual action planning process; expedited timber supply reviews for heavily infested areas; expedited licensing of allowable annual cut uplifts; and coordinated approaches to addressing conservation and land use planning issues. The province has also appointed a Community Advisory Committee including stakeholder representatives from municipal governments, First Nations, the forest industry, the scientific community, logging contractors, the environmental sector, and the federal government to provide advice on action plans.

Stakeholders are also involved in local land use and sustainable forest management (SFM) planning. Land use plans are now being reviewed to evaluate the risks to forest values created by the infestations. Industry foresters have been especially challenged to account for the infestation in their SFM plans and forest product certification.

Through the Canadian Forestry Service, the federal government has been providing research support with a competitive Mountain Pine Beetle Initiative. It is expected that the provincial government will seek financial resources similar to that provided to other ‘disaster areas’ for rehabilitation programs and community support.

This epidemic has the potential to leave widespread, long-lasting consequences across many sectors. It calls for all parties to work collectively with available information to maximize potential benefits while avoiding pitfalls – leaving ecological, economic and social legacies all can be proud of.

Background information and updates on ecological challenges are available at www.for.gov.bc.ca/hfp/mountain_pine_beetle/index.htm. Photos courtesy of Ministry of Forests.

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