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# Mountain Pine Beetle *Action Plan* 2006-2011

*Sustainable Forests, Sustainable Communities*



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# British Columbia's **Mountain Pine Beetle Action Plan** 2006-2011

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# Executive Summary

**The Mountain Pine Beetle (MPB) epidemic** in the Interior of British Columbia is no longer just a forestry issue. The Ministry of Forests and Range projects that 80 per cent of the merchantable pine in the province's central and southern Interior could be killed by 2013, and well over half that pine could be dead by the summer of 2007. Lodgepole pine is a major feature of many ecosystems, making up over half the Interior's annual timber harvest, and is critical to the economic, social and cultural well-being of the province. A concerted effort by all levels of government and key stakeholders is necessary to deal effectively with the impacts of the epidemic.

The Province is committed to action that will mitigate the impacts of this unprecedented epidemic on forest values, communities and the provincial economy in the short term, and ensure sustainability in the long term. Mitigation will be an ongoing process requiring two or perhaps three decades to complete. This plan provides a high level framework to direct provincial ministries and assist coordination between governments, industries and stakeholders during the next five years. It sets out seven objectives. Each objective will be achieved through the development and implementation of a coordinated strategy. The plan outlines a number of the key actions that will be taken to implement the strategies and achieve the objectives. Some actions will occur over the next five years, while others are scheduled to be done in 2006 and 2007.

The objectives are:

1. Encourage immediate and long-term economic sustainability for communities<sup>1</sup>.
2. Maintain and protect worker and public health and safety.
3. Recover the greatest value from dead timber before it burns or decays, while respecting other forest values.
4. Conserve the long-term forest values identified in land use plans.
5. Prevent or reduce damage to forests in areas that are susceptible but not yet experiencing epidemic infestations.
6. Restore the forest resources in areas affected by the epidemic.
7. Maintain a management structure that ensures effective and coordinated planning and implementation of mitigation measures.

This plan, developed with stakeholder input, describes the provincial government's response to the Mountain Pine Beetle epidemic, and will provide guidance to all groups involved in the mitigation effort. During the last year the Province and First Nations have been working toward methods of shared planning and activity. It is anticipated that by the next update of this plan in 2007, the objectives and actions will more directly reflect this cooperative approach.

## Introduction

**British Columbia** is currently experiencing the largest recorded mountain pine beetle outbreak in North America. This forest health epidemic is a catastrophic natural disaster and is causing widespread mortality of lodgepole pine, the Interior's most abundant commercial tree species, and ponderosa pine, a less abundant species. The epidemic puts forest values at risk and threatens the stability and long-term economic well-being of many communities. A concerted effort by all levels of government and key stakeholders is necessary to deal effectively with the impacts of the epidemic. This plan provides an overview of the Province's response, building on the Action Plans developed and implemented over the past four years. During that time the epidemic has spread, and it is no longer just a forestry problem. Therefore, this plan provides for the first five years of a broader, longer term approach involving all appropriate government ministries. Over the life of the plan, as the mitigation

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<sup>1</sup> In this use, the meaning of the term "communities" is intended to be broad, including First Nations, bands, municipalities and rural settlements.

efforts progress and forestry issues are addressed, the balance of activities is expected to shift more toward ensuring long-term economic, social and cultural sustainability.

The province's total inventory of merchantable mature lodgepole pine is approximately 1.8 billion cubic metres. Mountain pine beetles have reached epidemic levels several times over the last century in B.C., however past outbreaks were generally confined to limited geographic areas and were typically curtailed by cold weather. The current beetle epidemic has now killed over 400 million cubic metres of merchantable timber. This is an increase of 45 per cent over the last year. The infestation is now affecting over 8 million hectares of forest in the central and southern Interior of British Columbia. The outbreak continues to kill mature pine trees in the central Interior and is well established in the Thompson-Okanagan and Kootenay regions. Infestations have also appeared in the Peace River region, where they are being held in check through aggressive management. Only if a period of extremely cold weather (e.g. -20C in the fall or -40C in late winter) occurs throughout the affected area can the epidemic be stopped. As a result, it is likely the epidemic will only be over once it has infested most of the mature pine in B.C. Ministry of Forests and Range analysis shows that, at the current rate of spread, well over half of the merchantable mature pine in B.C.'s central and southern Interior will be dead by 2007 and 80 per cent by 2013.

In the short term, the epidemic is increasing economic activity for many communities as the timber harvest levels are increased to use dead trees before they decay and lose their commercial value. However, not all communities are benefiting equally, and many First Nations communities in particular have not experienced the economic benefits. This short-term surplus of harvestable timber will be followed by a significant reduction in the cut as the epidemic runs its course and dead trees reach the end of their economic usefulness. The loss of future timber supply presents a very significant challenge to the communities affected and the province as a whole. About 25-30 per cent of the volume on the province's timber harvesting land base is pine. In a large portion of the Interior, pine makes up over 50 per cent of the harvestable timber.

Mitigating the impacts of the epidemic goes well beyond forestry activities or the scope of any one ministry. It is a key priority of the provincial government. This plan provides a framework to guide all provincial ministries and agencies, and to assist communities, First Nations and stakeholders to identify and carry out what must be done. It is based on the best science and information available today, but will be reviewed annually and updated to reflect new knowledge and changing circumstances. Implementation of the objectives, strategies and actions outlined will require a concerted effort, including cooperation and resources from all levels of governments, the forest industry and others.

A significant challenge is to address this epidemic in a manner that captures the best economic value of beetle-killed forests while respecting the other values and resource objectives identified in land use plans. Equally important is to implement measures that will help communities deal with the economic and social impacts.

The objectives and actions described in this plan are based on a large body of work done by government ministries, and on input received from a wide range of stakeholders.

Additional information is available on the provincial government's Mountain Pine Beetle Web site at [www.gov.bc.ca/pinebeetle/](http://www.gov.bc.ca/pinebeetle/), which is updated as new research and information becomes available.

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## Overall Goal

The Province's overall goal for this plan is to sustain the long-term economic and environmental well-being of impacted communities<sup>2</sup>, while dealing with the short-term consequences of the epidemic.

## Objectives

These strategies provide an overview of the Province's measures to mitigate the impacts of the epidemic on forests and communities. Provincial government ministries and agencies are expected to work within these strategies to establish specific objectives consistent with their respective mandates. Others, including the federal government, communities, First Nations and industries will be encouraged to participate in planning and implementation.

The Province recognizes that responding to this unprecedented situation is complex, dynamic and involves many competing interests. It will be necessary to conduct a continuing dialogue amongst stakeholders during implementation, and to update and add to these objectives and the supporting strategies when appropriate.

Seven broad objectives have been adopted to guide the Province's activities:

1. Encourage immediate and long-term economic sustainability for communities.
2. Maintain and protect worker and public health and safety.
3. Recover the greatest value from dead timber before it burns or decays, while respecting other forest values.
4. Conserve the long-term forest values identified in land use plans.
5. Prevent or reduce damage to forests in areas that are susceptible but not yet experiencing epidemic infestations.
6. Restore the forest resources in areas affected by the epidemic.
7. Maintain a management structure that ensures the effective and coordinated planning and implementation of mitigation measures.

The key actions necessary to implement these strategies are identified on the following pages. Some actions are identified as taking place over the next five years, whereas others are scheduled to be done within the first year.

# Objective 1

## Encourage immediate and long-term economic sustainability for communities<sup>3</sup>.

In the short term the regional economies of the B.C. central Interior are experiencing an economic benefit due to increased harvesting and forestry activity related to timber salvage. However, this increased activity will be temporary and is expected to decline by the end of the decade. The current economic growth is also not shared equally amongst communities, and in particular many First Nations communities are seeing little benefit. Since economic development and diversification can take several years, work has been initiated with communities, First Nations and the federal government to address future needs.

Forestry is at least 30 per cent of the direct and indirect income in many of

the affected communities, and much higher in some. The projected future decline in annual timber harvest levels will result in less conventional forestry-based incomes in the impacted regions. It is expected that 25 per cent or more of the present income level in several communities will be lost. In addition to their direct economic benefits, the affected forests—especially the small holdings such as community forests and commercial woodlots that surround communities and travel corridors—provide a wide range of important environmental services. These include recreation opportunities, scenic values, wildlife and fish habitat, water interception, storage and filtration and other non-timber forest products.

Established economic sectors like tourism and agriculture will be encouraged to grow and operate to their

optimum capacity. However these sectors alone cannot make up the anticipated shortfalls in community and provincial income. The mining and energy sectors, in particular, have significant growth capacity and will be encouraged to develop.

Work will be undertaken on a number of fronts to invest in communities in a way that reflects local aspirations and develops diverse economic opportunities that will grow over time, be resilient and provide long-term stability.

## Key 2006/07 Actions:

1. **Complete socio-economic statistical baseline studies for MPB impacted regions and communities.**

Information will continue to be assembled on the historical and current socio-economic issues and trends in MPB affected regions. These studies will provide analytical information and statistical data that will be useful to a variety of government agencies and stakeholders in both socio-economic development, mitigation and transition planning.

2. **Continue to support First Nations, the Cariboo-Chilcotin Beetle Action Coalition, Omineca Beetle Action Coalition, (as well as similar groups should they develop elsewhere in the affected regions) and local governments throughout the entire impacted area.**

Provincial Programs and Coordination	
Encouraging Private Sector Investment	Targeted Public Investment
<ul style="list-style-type: none"> <li>• Policy and funding mechanisms</li> <li>• Information, analysis and feasibility studies</li> <li>• Market development and national/international liaison</li> <li>• Research and development</li> <li>• Public infrastructure programs and corridor plans</li> <li>• Cross-regional sector strategies</li> <li>• Programs and coordination to support regional strategies</li> <li>• Coordination with First Nations leadership initiatives</li> </ul>	

Regional Beetle Action Coalitions, First Nations and Community Programs	
Encouraging Private Sector Investment	Targeted Public Investment
<ul style="list-style-type: none"> <li>• Regional baseline and feasibility studies</li> <li>• Regional opportunities assessments and transition planning</li> <li>• Regional and local sector development strategies</li> <li>• Regional programs and projects</li> <li>• Coordination between First Nations and local governments</li> <li>• Local financing</li> <li>• Participation in provincial initiatives</li> </ul>	

<sup>3</sup> In this use, the meaning of the term “communities” is intended to be broad, including First Nations, bands, municipalities and rural settlements.

## Objective 1

First Nations and local governments have established leadership organizations in the areas most affected by the MPB epidemic. With funding assistance from the province, these groups provide local leadership in designing economic development and community transition strategies. Provincial government agencies will continue to support the beetle action coalitions by providing expertise in designing these strategies.

### 3. **Through regional development trusts, such as the Northern Development Initiative Trust (NDIT) and the Southern Interior Development Initiative Trust (SIDIT), begin to support locally-developed economic development strategies in MPB impacted communities.**

These trusts are provincially funded, independent organizations established through legislation. The NDIT manages several economic development funds, currently totaling \$185 million. \$30 million of the NDIT's assets are cross-regional and specifically targeted at economic development initiatives that will help to mitigate impacts of the MPB epidemic. The SIDIT has been established with a funding of \$50 million for economic development in the region.

### 4. **Continue to support maintenance of a healthy, profitable forest industry.**

Community economic well-being is directly related to the health and profitability of the forest industry. Although there will be inevitable

changes in the industry due to the MPB epidemic and other pressures, it will likely diversify and remain a primary employer and economic driver in the region. The influence of policies related to log grades, pricing, optimal use of fibre, market and product development will be examined by government and industry to determine where changes are required.

### 5. **Accelerate the prudent development of other resource-based sectors (e.g. mining and energy) to diversify the economic base of the region.**

The development of oil, gas and minerals may offer significant economic potential to offset large-scale declines in forestry that are expected during the next 20-30 years. The province will improve geophysical information and explore other actions to encourage responsible, accelerated development of resource-based industries in the MPB impacted regions of the province.

### 6. **Protect existing capacity and complete an assessment of possible agriculture expansion and agro-forestry potential.**

Synergies between the agriculture and forest industries will be explored. For example, to determine whether increased agriculture production can occur economically, and whether timber supply declines may be mitigated by intensively managed timber plantations on

cultivated lands. Mitigation activities, such as control of invasive plants and fencing to replace the loss of natural barriers due to salvage operations, will be undertaken where necessary to maintain and protect range. Timing of reforestation activities will consider impacts on grazing use.

### 7. **Continue to encourage outdoor recreation and tourism businesses.**

Many outdoor recreation and tourism businesses, lodges and resorts are important economic contributors to local economies, and rely, at least in part on parks, recreation sites, trails, forest access roads and other features that may be impacted by the MPB. Work will be undertaken to ensure the values, such as views and road access, these businesses rely upon are fully considered in the planning and implementation of mitigation measures, and that opportunities for new businesses (such as adventure tourism) are explored.

### 8. **Continue to encourage new, expanding and emerging economic development and business development opportunities.**

Without compromising existing businesses, opportunities will continue to be identified to encourage value-added and innovative forest products businesses, as well as other businesses that will benefit the local, regional and provincial economies.



## Objective 1

### 9. Support joint initiatives with First Nations related to development of enterprises based on management and harvesting of non-timber forest products.

Estimates suggest that the current economic value of harvests from fur trapping, mushrooms, decorative greenery, and other botanical forest products may be as much as \$600 million per year in B.C. Collecting and marketing these products is an important cultural and economic activity for First Nations and many rural communities, and may offer substantial long-term opportunities if prudently managed.

### Five-Year Actions:

- **Continue to encourage and support communities and First Nations to develop plans for long-term community well-being and sustainability.**

Healthy communities require a combination of services, infrastructure, lifestyle opportunities, employment and amenities. Each community is unique in its needs and opportunities. Individual communities and regional groups of communities will be encouraged to develop plans and implementation strategies that will lead to an overall improvement in the quality of life for all.

- **Encourage innovation and new opportunities to accelerate economic growth in MPB impacted areas.**

The size and extent of the MPB epidemic's impact is extraordinary and solutions may need to go beyond traditional approaches. All levels of government, First Nations, communities, research organizations and others will be encouraged to seek new and innovative opportunities to accelerate economic growth and assist transition planning in MPB-impacted communities.

- **Continue to monitor the impacts of the epidemic and salvage activities on the long-term timber supply that has historically supported communities.**

The timing and distribution of the bark beetle damage will differ between communities. It is necessary to continually assess the timber supply projections and their resultant implications for communities.

- **Assess the role of small woodlands, including community forests and woodlot licences and ensure mitigation strategies reflect their full range of values, particularly where they encompass high productivity and strategically located lands. Where appropriate, place a high priority on fuels management (wildfire prevention), and timely restoration of timber on these lands.**

Many of these small holdings are located next to communities in areas of high productivity and multiple values, such as valley bottoms, viewsapes, and domestic watersheds. As a result, they have a particularly high value for producing "close-in" timber for mills, recreation and scenic value for community members and tourists, and supporting agriculture activities and healthy communities. The province will begin assessing opportunities woodlots and community forests may have to mitigate Mountain Pine Beetle-related impacts.

- **Identify longer term infrastructure requirements necessary to accommodate economic growth and diversification initiatives, including infrastructure development opportunities that would help address the socio-economic gap between MPB affected First Nations and non-aboriginal communities.**

As mid- to long-term economic measures are identified it will be necessary to address the infrastructure requirements that will facilitate development and long-term community resilience. Many First Nations have unique infrastructure challenges that may be addressed concurrent with the achievement of broader objectives.

# Objective 2



## Maintain and protect worker and public health and safety.

In addition to the challenges presented to the forestry-dependent industries and workers, the widespread impacts of the epidemic affect communities, residents and visitors in the regions.

Accelerated harvesting to salvage dead timber significantly increases the heavy truck traffic on forest and public road networks. The higher number of vehicles and hours of use presents safety and maintenance challenges that must be addressed. In and near communities heavy industrial traffic can cause a localized deterioration in air quality. In many cases these road networks were designed for a lower traffic load and will require upgrades, increased maintenance, dust control and special safety measures (e.g. new signage and traffic control and enforcement) to cope effectively with the demand.

The large salvage program results in additional jobs and commercial activity for some communities, however like any economic surge it risks increasing the percentage of transient or inexperienced workers, requiring employers to step-up additional training and safety programs, communities to adapt to pressures on services, and families to

deal with change. These impacts, both positive and negative, are not evenly distributed between communities. If the risks and negative consequences are appropriately addressed, the possibility exists to improve, socio-economic conditions, including opportunities to close the gap between First Nations and non-aboriginal communities.

In the forest, the short-term consequences are also expected to impact parks and forest recreation facilities (e.g. danger trees in recreation sites and campgrounds), forest hydrology and watersheds, and the stability of steep hillsides where tree roots help hold the soil in place. This could lead to concerns for community water supplies. The dead and dying trees in and near settled areas can cause the forest fire hazard to become more severe, as well as affecting provincial parks and community green-spaces and the general benefits they provide. The use of prescribed fire to reduce hazards and prepare logged sites for replanting could result in air quality concerns for some areas.

As the harvesting of salvage timber declines (likely starting in about 10 years), some communities will experience a significant reduction in forest harvesting and manufacturing related jobs and economic activity. This will create new stresses on families and services, and place demands on community adjustment programs and social infrastructure. Work is underway, and will continue to ensure that the appropriate services and programs are in place to maintain high standards of well-being for people in the epidemic affected regions.

## Key 2006/07 Actions:

These are actions that will be undertaken immediately on a priority basis. Substantial progress is expected over the next year, and activities will continue into future years.

### 1. Work with the forest companies, contractors, and others to ensure continued high safety standards are applied on roads and forestry operations to protect workers and the public.

The province will continue to work with WorkSafe BC, the BC Forest Safety Council and others. As part of the effort to improve forest safety, the Province hired a dedicated safety officer for the Ministry of Forests and Range, a senior manager for safety in the BC Timber Sales program, and a coroner dedicated to forest safety.

### 2. Identify and monitor critical water supplies that may be impacted by the infestation or forestry mitigation activities.

In coordination with the Provincial Drinking Water Strategy, local users and communities, work will be undertaken to establish baseline information, monitor and protect water supplies critical to domestic, agricultural use, grazing use or fish habitat. Contingencies will be developed to address potential public health risks.

## Objective 2

### 3. Carry out fuel management and implement wildfire mitigation activities where necessary for public safety.

The Province will continue to work with the Union of British Columbia Municipalities, Provincial Emergency Program, Office of the Fire Commissioner, federal and local governments and First Nations to identify areas and develop Community Wildfire Protection Plans where the epidemic has seriously increased the hazard to public health and safety from wildfire. Programs, supported by public communications explaining the value of fuel management including prescribed burning, will be encouraged on public and private lands, including parks, recreation sites, and woodlots in close proximity to communities.

### 4. Monitor air quality and minimize the public health effects of smoke from increased use of prescribed burning.

The Ministry of Environment will carry out ongoing monitoring of air quality, and will work closely with regional health authorities, industries and the Ministry of Forests and Range to manage smoke in populated areas. Concurrently work will be undertaken with industry to identify cost-effective and ecologically appropriate alternatives to burning.

### 5. Continue providing advice and cooperation to communities to mitigate the damage to forests in urban areas such as municipal parks, and green spaces.

Urban forests, parks and green-spaces with mature lodgepole pine are being damaged by the epidemic. The Province does not have direct jurisdiction in these areas, but will cooperate with the federal, local and First Nations governments to support their mitigation programs within settled areas.

### 6. Continue working with the federal government and private land owners to address the epidemic on private property.

The federal government provides financial assistance to private land owners whose property is 10 hectares or greater. The province will work cooperatively with the federal government to ensure strategies are compatible with the overall forestry mitigation objectives.

## Five-Year Actions:

- Carry out assessments of the long-term safety needs of the transportation network (forest roads, municipal roads, public highways) within the impacted regions and develop plans for necessary maintenance, upgrades or changes.

Increased traffic and changed travel patterns due to accelerated timber harvesting will impact public roads, bridges, water and rail transportation infrastructure, including roads within communities. Public and worker safety, as well as travel efficiency and maintenance needs will be assessed by



the Ministries of Transportation and Forests and Range in conjunction with local governments, and where appropriate applicable programs will be initiated.

- Work with communities, including First Nations, agencies and service providers to establish baseline information and monitor trends in public health and safety that may be impacted by the longer term consequences of the epidemic.

Over time it can be expected that the environmental and economic impacts of the epidemic will lead to social impacts. Where negative trends can be identified early, communities will be able to respond appropriately.

- Identify and monitor areas of unstable terrain that may be impacted by the infestation or mitigation activities.

Areas at increased risk of landslides, presenting a threat to public safety, infrastructure, water quality or fish habitat will be managed to

## Objective 2



minimize risks where possible. Information collected to meet this objective will also serve to inform decisions made under Objective #3, to identify retention areas.

- **Undertake work to understand and address how the epidemic and subsequent activities impact the sustainability of cultural values, traditions and practices.**

Loss or disruption of important cultural values can have serious consequences for the health and sustainability of communities and their citizens. Many of the people in the region, and particularly First Nations, have strong cultural ties to the forest that are being impacted by the epidemic, salvage harvesting and other activities.

- **Monitor changes in fire occurrence in areas affected by the epidemic and address suppression resource requirements accordingly.**

Preliminary operational observations indicate that MPB presents additional challenges from a fire management perspective. MPB affected stands have seen increases in potential fire starts and exhibit more extreme fire behaviour and larger wildfires.

## Planning Components:



# Objective 3

**Recover the greatest value from dead timber before it burns or decays, while respecting other forest values.**

The epidemic has, and is killing commercial timber much more quickly than it can be harvested. The dead timber is expected to remain commercially valuable for 5-18 years depending on local conditions (research to refine this estimate of “shelf life” is nearing completion). This is timber that the forest industries and communities were relying upon for their longer term future harvest, but must be recovered now.

Although it is important to recover the economic value and generate jobs by harvesting the dead timber and reforesting the sites, it is also important to recognize that impacted forests provide wildlife habitat, wilderness, and other ecological benefits that must be maintained.

## Key 2006/07 Actions:

- 1. Consult with local governments, regional coalitions and First Nations in the ongoing development of salvage strategies.**

The increased and redistributed harvest due to salvage operations will have important economic, social and cultural impacts for local communities and First Nations. These will include workforce relocation, impacts on milling and service industries, and future uses of the forest.

- 2. The Forest Practices Board will continue in its role as an independent public watchdog that**

## Integrated Strategy:



## Objective 3

### **reports to the public about compliance with the Forest and Range Practices Act and the achievement of its intent.**

Within the MPB epidemic area, the Board will carry out audits on forestry operations, undertake special investigations where warranted, and investigate public complaints.

### **3. Work will be continued with the federal government, Forestry Innovation Investment Ltd. and others to carry out research and assessments that will help determine how long dead timber will retain economic value (shelf-life) and to use the information to guide salvage priorities.**

This information is important to help government, First Nations and industry planners and decision makers determine how long timber will retain its commercial value under different site conditions and assist in determining the harvest schedule.

### **4. On an ongoing basis, using new information as it becomes available, determine the best rate of harvest to capture the economic value from timber to be salvaged over the term of the strategy, while considering future forest values, consistent with established land use objectives.**

The Chief Forester will continue to periodically review the timber supply in affected areas and make further adjustments to the Allowable Annual Cut (AAC) to recognize new circumstances or

information. The Chief Forester's AAC determinations and rationales are public.

### **5. Continue to issue licenses and encourage expedited development for salvage opportunities already awarded, and where additional opportunities and demand are identified, invite additional applications for licences to harvest increases in the Allowable Annual Cut.**

Where the Chief Forester increases the AAC or where timber volume is made available through re-allocations under the Forestry Revitalization Plan, the Minister of Forests and Range will apportion the volume to appropriate forms of licence, which may include BC Timber Sales, First Nations forest and range opportunities, or other non-replaceable tenures suited to the mitigation strategy.

### **6. Price damaged timber in a manner that recognizes its value, and provides revenue to the Crown and industry viability during the term of the salvage program.**

The damaged timber retains most or all of its "green" value for some time before beginning to split and decay. Timber will be priced in a manner that reflects its market value, providing revenue to the province and encouraging a competitive industry.

### **7. Encourage full utilization of the existing timber processing capacity.**

It is important that the exist-

ing timber processing industry maintain its long-term viability. It is also important that the existing capacity, to the extent it is suitable, utilizes salvaged timber. Therefore, existing industries will be encouraged to carry out salvage within the current AAC.

### **8. Ensure road networks have sufficient capacity for timber transportation needs.**

The Ministry of Transportation will invest \$90 million over the next three years to rehabilitate and upgrade roads impacted by increased log hauling due to timber salvage operations. Roads under municipal jurisdiction, similarly affected, will also be assessed to determine degree of damage and cost of any rehabilitation.

### **9. Encourage emerging and alternate timber processing industries to utilize timber that is surplus to the capacity of the existing primary industry.**

In areas where the supply of salvageable timber exceeds the capacity of the existing timber processing industry the government will establish salvage areas and offer licences to encourage alternative emerging industries. Examples of alternate processing include production of oriented strand board (OSB), cogeneration of electricity, pellets for heating fuel, etc.

### **10. Complete development and begin implementation of measures to encourage value-added wood processing.**

## Objective 3

The province will work with the wood processing industry and organizations responsible for international marketing to design and implement measures that will encourage the growth of sustainable value-added wood processing businesses in B.C.

### 11. Investigate export opportunities.

Where beetle-killed timber is surplus to domestic needs, the government will consider log exports. This is one option to capture maximum economic value for the Province before the value of dead timber is lost.

### 12. Develop new and innovative timber tenures to facilitate recovery of timber and achievement of mitigation objectives, and evaluate the viability of existing tenures most impacted.

The Province recognizes that traditional forest tenures may not be suitable for some salvage situations. New approaches will be developed to facilitate salvage in special circumstances. The viability of existing tenures, especially small area-based tenures, will be examined to determine whether changes are required.

### 13. Use small-scale salvage opportunities where they are the most appropriate method to achieve mitigation strategies.

Small scale salvage opportunities are designed to recover small timber volumes that might not otherwise be economically viable,

such as small patches of wind-thrown timber, timber killed by endemic insects and disease, and salvaging in post-harvest situations. The program has limited application in the widespread salvage operation characteristic of most of the MPB epidemic. The program therefore will be used judiciously with regard to MPB, such as in areas of “leading edge” harvest where control objectives for bark beetle are in place.

### 14. Continue to work with the industry and other existing forest product marketing organizations to maintain and expand markets.

It will be necessary to assure the market place is fully informed and maintains confidence in the quality of forest products from beetle-killed timber. Through Forestry Innovation Investment Ltd. (FII) and the BC Market Outreach Network, the government will contribute to marketing initiatives that benefit the provincial economy, government revenues and industry as a whole.

### 15. Begin the process to update and improve the timber inventory and information about non-timber resources to facilitate more accurate assessments and forest management decisions in the epidemic area.

The widespread mortality of lodgepole pine has resulted in significant changes to the forests, both for the timber inventory and for non-timber values, requiring

that the inventory be updated over an extensive area. For example the government is considering an eco-regional assessment to identify high priority candidate areas for biodiversity conservation.

### 16. Ensure management requirements in salvage areas address the need for stewardship of non-timber forest resources.

Widespread timber salvage operations need to take place within the context of overall, long-term forest stewardship objectives. Work will be accelerated to collect information, undertake research, and develop planning and decision models that help ensure balanced resource stewardship including the maintenance of a full range of environmental services on impacted landscapes. New information and decision tools will be used to inform objectives and decisions.



# Objective 4

## Conserve the long-term forest values identified in land use plans.

Land use plans for most areas of British Columbia have been developed through extensive public involvement processes and reflect the interests of communities. These plans include not only resource use and development objectives, but also conservation and ecological objectives. The land use planning process provides a framework to guide decisions about what activities can occur and where.

By killing the most widespread tree species in many of these land use plan areas, the epidemic has consequences for cultural, agriculture, tourism, conservation, wildlife habitat and biological diversity objectives and these must therefore be taken into account in the mitigation plan.

## Integrated Strategy:

- **Assess impacts of epidemic and salvage on land use plan objectives and strategies**
- **Incorporate First Nations interests**
- **Adjust plans where necessary to recognize the changed circumstances**

## Key 2006/07 Actions:

1. **Carry out a detailed, qualitative assessment of the impacts to strategic resource values.**

Building on work already done, assemble information on all resource values and how they are expected to be impacted through the various stages of the epidemic and salvage operations. A high priority will be adjustments to biodiversity strategies in highly impacted stands.

2. **Continue working with First Nations and with land use plan monitoring committees and stakeholders on epidemic-related risk assessments to ensure beetle management and timber salvage activities are carried out in a manner that respects the values identified in land use plans and by First Nations.**

The salvage operations will result in some areas that were planned for cutting over a time frame of up to 50 years being harvested in 10-15 years. This accelerated harvest schedule will impact timing to meet some landscape management objectives, but will be undertaken in a manner that respects the underlying land use values. The accelerated development will have a significant impact on the social, cultural and economic interests of First Nations. Land use plans will remain in place, however strategies will likely need to be adjusted in some places to recognize the impacts of the epidemic. In most areas, First Nations did not

participate directly in the development of land use plans and there is a need to reconcile their interests with these plans. This will be a high priority in areas where plans are affected by beetle-related activities.

3. **Ensure management of parks and protected areas incorporates an assessment of the impacts of the epidemic on conservation values.**

Parks and protected areas provide outdoor recreation and conservation values and contribute to biodiversity and other forest values within plan areas. Infestation impacts inside parks and protected areas will be managed in a manner that addresses park objectives and complements actions taken to mitigate effects and reduce the risk to values in adjacent areas. In areas where the values in parks are seriously impacted, mitigation will be necessary. This may include the use of prescribed fire or removal of infested or dead trees.

4. **Incorporate conservation objectives into timber salvage operations, leaving some areas unharvested as temporary conservation areas.**

The epidemic is impacting conservation values as well as timber. An integral part of the decision-making process for salvage will be to identify and describe key areas that will not be salvaged, but will be managed as temporary increases in retention area at landscape and site level. The Chief Forester has provided guidance



## Objective 4

to forest managers in this regard and an eco-regional assessment of candidate areas for biodiversity conservation is planned. Where a community action coalition is considering conservation strategies, the appropriate ministries will engage as early as possible.

### 5. Examine the opportunities and costs, including possible funding sources, for techniques to restore non-timber values (e.g. wildlife habitat, hydrological function)<sup>4</sup>.

Restoration programs in the past have increased our knowledge and understanding of forest ecosystem dynamics, and how management practices can influence non-timber values such as biodiversity. Harvesting and reforestation treatments should be planned and conducted to maintain and improve non-timber values, especially where these have been compromised by the beetle infestation. Where harvesting activities are not a priority, restoration treatments might contribute to meeting timber and non-timber objectives. For example, in the past the Chief Forester acknowledged that watershed restoration had a positive impact on timber supply. Assessments are needed to develop priorities. The Province is developing a restoration strategy and will work with the federal government to secure funding.

## Five-Year Actions:

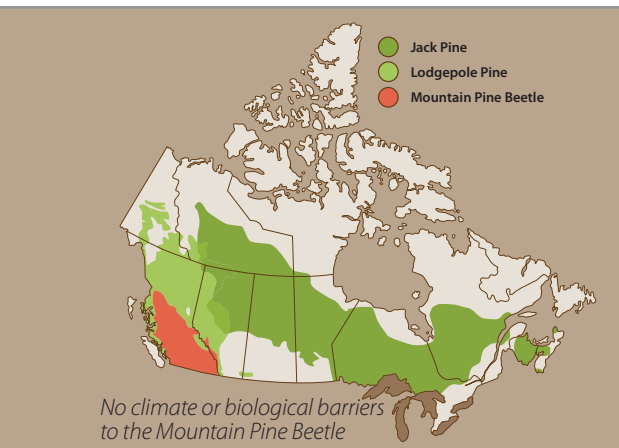
- **Assess the impact of the epidemic on the full range of forest values to provide information for future management decisions.**

The epidemic has significantly impacted a wide range of forest values such as tourism, water, agriculture, wildlife habitat, recreation use, visual quality and biological diversity. Updated inventories and assessments will be required to support future management actions.



<sup>4</sup> Note that this action is closely linked to Objective #6—Restore the forest resources in areas affected by the epidemic.

# Objective 5



## Prevent or reduce damage to forests in areas that are susceptible but not yet experiencing epidemic infestations.

In areas that are not yet experiencing an epidemic but have mature pine forests it is feasible to prevent or reduce damage by focusing on early detection and removal of infested “green attack” trees. This is particularly appropriate in areas near the “leading edge” of the epidemic area where close monitoring and aggressive control actions may prevent the beetle populations from taking hold east of the Rocky Mountain range and spreading into Alberta.

## Integrated Strategy:

- Overall provincial detection and control objectives
- Emergency Bark Beetle Management Area and zoning / mapping
- Government(s), industry, land-owner responsibilities
- Coordination with BC Parks, Parks Canada and Province of Alberta

## Key 2006/07 Actions:

1. Continue to establish Emergency Management Units, as needed, according to science-based criteria and the appropriate forest management strategies applied.

Under the Forest Planning and Practices Regulation the Province has established an Emergency Bark Beetle Management Area, within which Emergency Management Units are identified. The units are designated either as “aggressive” management or “sanitation” management, and action will be taken accordingly.

2. Continue to conduct timely and appropriate detection and assessment surveys to monitor the level of infestation and success of mitigation actions.

In areas where prompt action can prevent or reduce the spread of an epidemic, regular, timely and accurate surveys will be done to identify infestations and develop an immediate response.

3. Collaborate with neighbouring jurisdictions to contain outbreaks and reduce damage in border areas.

The Mountain Pine Beetle Emergency Response- Canada-BC Implementation Strategy was released in September 2005. Four forest districts are undertaking bark beetle suppression along the BC-Alberta border, complementing suppression treatments by the Alberta Ministry of Sustainable

Resource Development, BC Parks and Parks Canada.

4. Continue the streamlined approach to operational planning and approvals for access and harvesting where necessary to achieve beetle management strategies.

The *Emergency Bark Beetle Regulation* and the *Forest and Range Practices Act* provide for an expedited government approval process where timber harvesting is necessary to achieve the established management strategy.

5. Investigate silviculture regimes that are less susceptible to catastrophic loss.

In conjunction with the Forest for Tomorrow program, develop innovative reforestation and stand management practices that will increase the resistance of commercial timber stands to insect outbreaks.

# Objective 6

## Restore the forest resources in areas affected by the epidemic.

The widespread nature of this epidemic will impact entire forest ecosystems at all levels – local site, landscape and regional. Timber growth, wildlife habitat, soil productivity, water quality and runoff, recreation uses and many other forest values will be affected by the death of the pine trees. The Ministry of Forests and Range has determined the rate at which trees are being killed by the Mountain Pine Beetle far exceeds the previously forecast rate of commercial harvest in many areas. Although a significant portion of the dead timber is expected to be salvaged and the areas reforested over the next few years, the total amount that will be recovered is uncertain.

A key challenge in some management units is that the extensive volume of dead timber will result in a “gap” in the supply of mature timber 20-60 years in the future. Although this cannot be completely avoided, measures can be taken to reduce the negative impacts. While accelerated salvage harvesting and reforestation takes place, it will be necessary to carry out reforestation and restoration activities with an awareness of climate trends and long-term risks.

## Integrated Strategy:

- **The Forests for Tomorrow program was introduced by government in 2005.**
- **The program aims to improve the long-term timber supply through the re-establishment of young forests on land that would otherwise remain under-productive. The program focuses on land that is primarily within the timber harvesting land base yet outside of forest industry obligations.**
- **The program emphasizes surveying, site preparation and planting. These treatments are guided by strategic level program planning, seed supply planning, silviculture strategies and timber supply analyses.**
- **The up-front overview surveys and program planning will formulate a clear and full picture of a cost-effective program and budget profile. It is expected that this will be a program with a long-term funding level of at least \$50 million per year that would continue until the Not Satisfactorily Restocked areas have been reduced to levels that do not pose serious timber supply problems.**
- **The initial priority is aggressive reforestation and ecosystem restoration of the 2003 and 2004 wildfires and brushing in areas most affected by the MPB infestations.**

- **Silviculture strategies for the 12 most severely MPB-impacted management units are being undertaken to help optimize the application of available funding towards the goals of improving the future quantity and quality of both habitat and timber supply.**

## Key 2006/07 Actions:

1. **Reforest on a priority basis to return the best sites to timber productivity quickly.**

Recognizing impacts of this epidemic on future timber supply, efforts will be made to identify the most productive growing sites and ensure they are restored to fully stocked, free growing timber as quickly as possible. This activity will be planned in conjunction with timber salvage planning. Reforestation will consider methods to prevent future widespread epidemics by managing species, age and other parameters.

2. **Establish strategies and priorities for returning the most productive multiple-use lands to productivity quickly and efficiently, particularly in areas that provide for a variety of forest values (e.g. water, wildlife, cultural or recreational, in addition to timber).**

Many very productive timber lands are located in close proximity to communities, water courses and transportation corridors where scenic, recreation, wildlife and timber values are all of high value. Often these areas include private



land, woodlots, community forests and a complex pattern of use. The province will work with other levels of government, industry organizations and community groups to address the special issues in these areas.

**3. Examine the opportunities and costs, including possible funding sources, for silviculture techniques to address mid-term timber supply gap.**

Planning is well underway to identify feasible options (technical, ecological and economic) to mitigate the future downfall in timber supply expected to occur upon completion of salvage operations. These may include fertilization, planting fast-growing species, retaining stands with advanced understory or other silviculture measures. Initial assessments suggest that a total of approximately \$800 million to \$1 billion will be required to carry out this work. The Province has allocated \$161 million for the first four years to begin this process, and will continue discussions with the federal government to secure adequate long-term funding.

**4. Improve forest resource inventory information.**

Timber, wildlife, water and other inventory information will be updated to reflect changes due to the epidemic and salvage activities in order to assist future planning and resource supply analysis. The inventory will identify areas susceptible to future outbreaks, and establish the basis for ongoing monitoring of forest conditions.

**5. Encourage adaptive management monitoring, research and innovation.**

Continue to work with federal, provincial, First Nations and industry research communities to ensure key knowledge and information gaps are addressed. Priorities will focus on practical solutions to help mitigation and recovery activities.

**6. Identify the policy issues or constraints to implementation of longer term strategies and address them.**

Forest policy changes may be required to effectively implement stewardship measures and apply silviculture and restoration techniques not anticipated as part of normal operations.

**Five-Year Actions:**

- **Restore forest ecosystem productivity.**

Areas that are not reforested as a part of normal post-harvesting activities will be restored to productivity on a priority basis. This may include areas that are not zoned for timber production but are important to protection of water resources or wildlife habitats. The Ministry of Environment is developing an ecological restoration strategy for these areas.

- **Undertake stand treatments on a priority basis to ensure timber will be available for harvest sooner than originally planned.**

The trees that will be harvested between 20 and 50 years from now are already growing, however without intervention they will not be merchantable in time to address the post-salvage timber supply shortage. To bring these trees to a commercially valuable size and quality sooner, brushing, spacing, thinning and fertilizing may be required.

# Objective 7

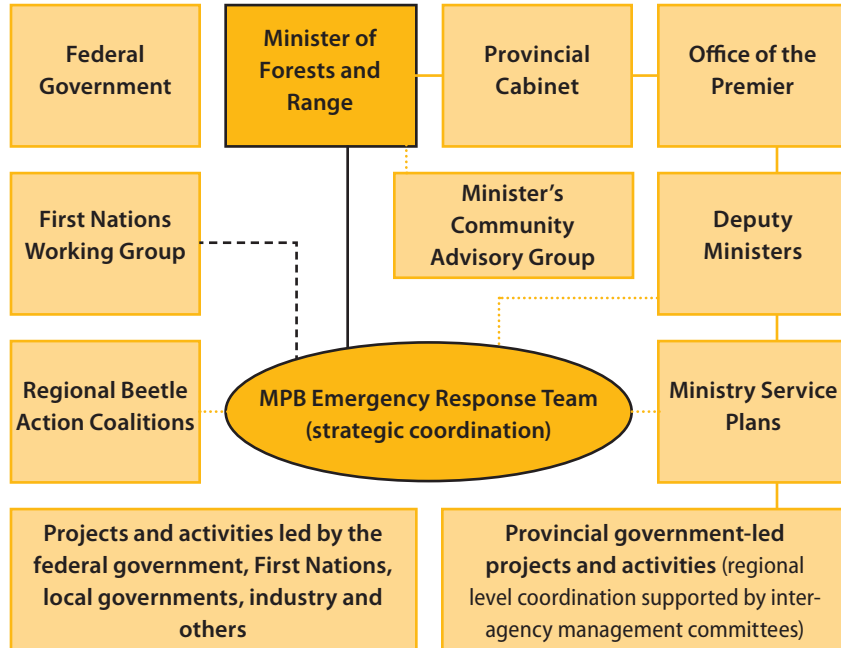
**Maintain a management structure that ensures the effective and coordinated planning and implementation of mitigation measures.**

Responding to the impacts of such a widespread epidemic involves a diverse group of organizations. Within the provincial government several ministries are working on aspects of the timber recovery and forest management challenges created by the epidemic, while others are responding to the immediate and longer term economic and social challenges. The initiatives undertaken by various ministries will be coordinated in a manner that makes the best use of staff, funding and other resources.

Although the provincial government plays a key role in leading the response to the epidemic, all levels of government, including First Nations, as well as non-government groups and industries will play an important part in its success. The actions identified under this objective will help to ensure that:

- Strong leadership and support is provided by the provincial government;
- Activities are coordinated within and between governments; and
- Key stakeholders have input to plans and priorities at a strategic level.

## Integrated Strategy — Strategic Coordination:



The following provincial government ministries and agencies are currently participating directly in initiatives to address the MPB epidemic:

- Ministry of Aboriginal Relations and Reconciliation
- Ministry of Agriculture and Lands and Integrated Land Management Bureau
- Ministry of Community Services
- Ministry of Energy, Mines and Petroleum Resources
- Ministry of Forests and Range
- Ministry of Economic Development
- Ministry of Environment
- Ministry of Transportation
- Ministry of Sports, Tourism and the Arts
- Forestry Innovation Investment Ltd.
- Intergovernmental Relations Secretariat

## Key 2006/07 Actions:

### 1. Provide leadership and direction through the Minister of Forests and Range.

The Minister of Forests and Range will lead the provincial government's efforts on behalf of Cabinet. During 2006/07, in addition to ministries listed on the previous page, consideration will be given to including the Ministry of Advanced Education in MPB activities related to developing careers training needed to diversify the future economy.

### 2. Solicit broad stakeholder input through the Minister's Community Advisory Group.

The Advisory Group is comprised of senior representatives of the federal, provincial, First Nations, and local governments and primary stakeholder groups and is chaired by the Minister of Forests. The Minister's Community Advisory Group provides input into the various aspects of government's Mountain Pine Beetle Action Plan.

### 3. Coordinated activities between all levels of government, including federal, local and First Nations.

The Province will continue to work with other governments at the leadership and operational levels to ensure programs and priorities are aligned and complementary.

### 4. Work with First Nations to provide a path for a mutually beneficial relationship with respect to the response to the epidemic.

In 2005 First Nations developed the BC First Nations Mountain Pine Beetle Action Plan and appointed a working group to initiate action under the plan. The Province and First Nations will implement a Protocol Agreement to encourage coordination and mutual support.

### 5. Work with regional Beetle Action Coalitions to coordinate the efforts of local governments and stakeholders with provincial initiatives.

Local governments and key stakeholders have established the Cariboo-Chilcotin Beetle Action Coalition and the Omineca Beetle Action Coalition to provide regional leadership on mitigation plans and activities.

### 6. Assure inter-ministry coordination through the Emergency Response Team.

Within the provincial government, a coordinated response to issues and appropriate distribution of responsibilities and resources between ministries will take place at the highest level. The Emergency Response Team is led by an Assistant Deputy Minister who will work closely with senior government staff and all relevant ministries. A Senior First Nations leader will be appointed to provide liaison and coordination between the activities of Provincial ministries and First Nations. At a regional level, inter-agency management teams may play a role to coordinate government implementation activities.

### 7. Establish a MPB information network.

The number of participants and activities involved in the MPB response demands an efficient and effective means for access to information on current trends, new research, and mitigation initiatives. There are already a number of organizations in the province involved in training, extension and communications activities. The Emergency Response Team will work with these organizations to ensure an efficient exchange of information occurs.

### 8. Zone the infested and susceptible areas to ensure that forestry mitigation measures taken are suitable and feasible for the local circumstances.

Infested and susceptible forest areas will be included within the Emergency Bark Beetle Management Area. Broad zones (Emergency Management Units – EMUs) will be established under the Forest and Range Practices Act and the Forest and Range Planning and Practices Regulation to identify where aggressive and sanitation timber management responses will be carried out. Operations conducted by the forest industry will be expected to apply the best management practices for the area and circumstances. Monitoring will be carried out to determine whether strategies are being implemented and assess their success over time.

## Objective 7

### 9. Apply timber administration and pricing consistently in areas with similar circumstances.

Government will closely monitor *Forest Act* licences and stumpage rates and ensure mitigation strategies are implemented equitably.

### 10. Work with forest companies and forest industry associations to manage and implement solutions.

Forest companies play an important role in all aspects of managing the forests, utilizing the damaged timber and generating economic activities with affected communities. They will play a key role in implementation of many of the actions aimed at dealing with the impacts of the epidemic.

### 11. Work with stakeholders to communicate about the epidemic and mitigation measures.

B.C. remains committed to managing to high environmental standards, and sustainable forest management. Communications initiatives will be undertaken to ensure members of the public and international forest products customers have accurate information.

### 12. Work toward establishment of long-term funding to support mitigation and recovery activities.

Some mitigation measures may require resources outside of regular government or private sector programs. An assessment will be carried out to determine

if and how a fund should be established to assist with the cost of these measures. (Examples of these extraordinary measures include: ecosystem restoration, community transition planning, or public infrastructure). The Province will work with the federal government on this matter.



#### Minister's Community Advisory Group on the Mountain Pine Beetle

B.C.'s Mountain Pine Beetle Action Plan is updated on a regular basis with stakeholder input through the Minister's Community Advisory Group, which represents communities, First Nations, the forest and range industries, logging contractors, academia, environmental groups, and the federal government.

- Donna Barnett – District of 100 Mile House
- Ric Careless – BC Spaces for Nature
- Bob Flinton – Ranching Industry
- Len Fox – District of Vanderhoof
- Greg Halseth – University of Northern British Columbia
- Ken Higginbotham – Canfor
- George Hoberg – University of British Columbia
- Hank Ketcham – West Fraser Timber
- Rosanne Murray – Bulkley Nechako Regional District
- Roy Nagel – Central Interior Logging Association
- Dave Neads – Cariboo Chilcotin Conservation Society
- Mike Robertson – Cheslatta Carrier Nation
- Barry Seymour – Lheidli T'enneh
- Bill Wilson – Pacific Forestry Centre, Natural Resources Canada



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