

## EXECUTIVE SUMMARY

# **The Economic, Social and Environmental Costs of the Mountain Pine Beetle in the Grande Alberta Economic Region (GAER)**

Stage One Report:  
The BC Experience and Lessons for GAER

Presented to GAER by  
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## **Introduction**

The Grande Alberta Economic Region (GAER) asked Cambridge Strategies Inc (CSI) to assist in the development of a strategy to ensure its constituent communities respond effectively to the arrival and impact of the Mountain Pine Beetle (MPB) in Alberta.

In Phase One of the GAER MPB project, CSI provided a report which addresses four key questions. These were:

- 1) How real is the threat of the beetle to GAER?
- 2) How much time does GAER have to prepare for the beetle?
- 3) What has been the British Columbia experience with the MPB and how have they responded?
- 4) What can GAER learn from BC's experience?

CSI presented GAER with a 23 page report, providing background on the BC experience, key findings, and lessons for the region. To read the complete report, go to <http://www.grandealberta.com/mountain-pine/reports.htm>.

## **Key Findings and lessons for GAER**

CSI met with representatives from the Government of Alberta, for initial insight into Alberta's response to the invasion of the beetle on this side of the border. These meetings, coupled with an assessment of the BC experience, provided a series of key findings and lessons for the Grande Alberta Economic Region. Some highlights from these findings and lessons:

### **Key findings**

- 1) British Columbia was forced to respond to a crisis but Alberta has time to adapt and plan for change. BC's forestry sector is highly dependant on its large volume of lodgepole pine. Many communities rely exclusively on the forest sector. Once MPB infected wood has been harvested, BC faces huge problems regarding forested-community sustainability. The situation is different in Alberta. The economy of both the province and its communities is generally more diversified and less reliant on one industry. We have less lodgepole pine and are less dependent on its harvest. Therefore, while time remains of the essence, Alberta has time to develop a sustainability model.
- 2) It will take 3-5 years after the initial attack (in the summer of 2006) before the Government of Alberta can really understand the full impact of the MPB.
- 3) The province welcomes and will consider funding community led sustainability initiatives for the MPB. It has requested the federal government help provide funding for community MPB plans.
- 4) The province's MPB Political Action Committee is developing a mandate and will seek public input and response to the MPB problem

- 5) The province is ready to assist communities in developing value-added fibre uses
- 6) Alberta is planning to harvest over-mature pine forests at an accelerated rate to improve forest health and diversity. The annual allowable cut is forecast to double over the next decade as part of the Healthy Pine Forest Strategy. Harvesting of pine-beetle kill will be over and above the harvesting that has already been planned through the Healthy Pine Forest Strategy.

#### Lessons for GAER

- 1) The beetle infestation cannot be stopped. You must adapt and plan around it.
- 2) Communities in the GAER have time to build relationships, assess the MPB threat and plan accordingly. But time remains critical and should not be wasted.
- 3) GAER has an opportunity to work with the Government of Alberta and the Political Action Committee to become a provincial leader in measuring community value-at-risk and developing appropriate sustainability responses.
- 4) GAER communities must develop public trust that the bio-physical aspects of infestation are being well managed. They must invite public input on socio-economic alternatives.
- 5) GAER must develop a strong coalition among communities, First Nations, industry, citizens and government to ensure everyone is invested and dedicated to finding alternatives and solutions.

### **BACKGROUND**

#### **The Mountain Pine Beetle**

The current MPB outbreak is the largest insect epidemic in North American recorded history. The beetle is a native pest to the pine tree (particularly to the lodgepole pine) and usually plays a vital role in maintaining forest bio-diversity, attacking weak trees and aiding new growth. However under certain conditions, such as large areas of similarly-aged mature pine stands; fire suppression; a streak of unseasonably warm weather (summer or winter); or drought, then mass outbreaks can occur.

The beetle spends most of its life under the bark of the pine, creating tunnels in the soft wood, laying eggs and infecting the tree with a blue-stain fungus. This fungus has two functions. First, it prevents the tree from repelling the insect with resin. Secondly, it blocks the absorption of water and nutrient flow. Taken together, the beetle and the fungi can kill a tree in a matter of weeks. The fungus also discolours sap-wood, devaluing the commercial worth of the timber but not the integrity of the wood itself. If trees are harvested two to three years following an attack, most of the economic value of the tree is retained.

The MPB is extremely resilient. They produce their own anti-freeze and are further insulated by tree bark or high snow levels. While the most effective way to stop beetle spread is through a continuous period of extremely cold weather, or through the high heat of a forest fire, it must be noted that the beetle can recover quickly and resume its attack on an otherwise healthy forest.

## **The BC Experience**

The MPB population has been increasing in BC for over a decade but is just now approaching a peak. The outbreak can be blamed on three significant factors. First, through the promotion of fire prevention, there is a profusion of mature lodgepole pine in the BC interior. Second, climate change has produced a series of hot, dry summers and mild winters, allowing the beetles to not only thrive but to spread to higher elevations and more northerly latitudes. Finally, there was a lack of effective control action during the outbreak's early stages. Now that the beetle has spread to Alberta, the challenge is whether we can adapt to the economic and social consequences of infestation.

### **The Environmental, Social and Economic Impact of the Beetle:**

On an environmental basis, there are a number of cumulative consequences to infestation. As trees die, these include: changes to water tables and stream flows; soil erosion; increased run-off or flooding; threats to slope stability; declines in water quality and damage to fisheries. The risk of forest fires increases, as do impacts on wildlife habitat and species-at-risk. The ability of forests to absorb carbon decreases. Additionally, as harvesting of infested trees increases, large clear-cut areas are likely to emerge, further impacting habitat. There will be a need for more logging roads to transport people and product; this increases the potential of poaching and predation.

Economically, there are short-term benefits to the infestation as the sector conducts large-scale salvage operations. But as timber supply decreases, the economy will slow down. Lodgepole pine is BC's most commercially harvested tree – the lifeblood of that industry. At the time this report was published, an estimated 8.7 million hectares of pine forest had been destroyed by the beetle; that translates to 400 million cubic meters of merchantable pine or 4 times the Annual Allowable Cut for the entire province. It is expected harvest levels will decline by over 50 per cent in some areas of the province and that BC will experience a 30 per cent decrease in future stand volume. As forest-sector activity increases to handle the short-term increase in timber activity, there will be spin-off benefits to communities, service industries and retail trades. But this boom will likely last just 10-15 years. Ultimate economic impacts could be the loss of 58, 000 jobs, 4 per cent of BC's GDP and 5 per cent of Canada's balance of trade.

The social impact of the beetle - the effect of infestation on communities and residents - is harder to assess. Qualitative studies have not yet been done in depth or in quantity. One study determined, however, that greater economic diversity, community self-sufficiency and local leadership, combined with a lower dependency on the forest industry, all contribute to greater community resilience. Additionally, it's been found that a heightened awareness of beetle associated risks can lead a community to a greater adaptive capacity. In other words, the more a community knows, the more likely it is to find a solution.

To help inform the GAER MPB project, CSI conducted a series of interviews with BC communities hit by infestation. These interviews asked questions regarding the impact of the beetle on the community, and what activities each community has undertaken to

manage and mitigate the effects of the beetle on community sustainability. Those results are detailed in the complete Phase One report.

#### Government Response - BC Mountain Pine Beetle Management

Initial provincial policy focused on aggressive control strategies and attempts to isolate the beetle. This was ineffective. Now, BC policy has shifted to minimizing the loss of merchantable timber and creating community opportunity; this requires a shift in priorities and regulatory regimes. Efforts are focused on maintaining revenues for communities, industry and government while supporting social, economic and environmental values. Policy involves establishing optimal salvage harvest levels and marketing salvaged timber while conserving non-timber values and restoring forest resources; preparing communities for boom and bust; and aggressive containment in the south- and north-east sections of the province. The main tool for these actions is the BC MPB Action Plan.

#### Next Steps for GAER

CSI recommends the next steps be addressed in Phase Two of the GAER MPB project:

- 1) Community engagement and capacity building to ensure all GAER communities are informed, invested, and engaged in developing alternatives for diversification, adaptation and sustainability.
- 2) Development of a political action plan. This includes the development of a business case which addresses the realities, issues, challenges, opportunities, alternatives and scenario options available for GAER. This step will also include meetings with key government representatives toward realizing project goals.
- 3) Development of a communications plan which will inform and encourage interest and support around the diversification of local economies, from the public, government, industry and media.