Interpretive Bulletin
Planning Mountain Pine Beetle Response Operations

1.0 *Preamble*

This Interpretive Bulletin applies to the working forest land category on Alberta Public land (see *MPB Action Plan for Alberta, section 3.1*). Mountain pine beetle (MPB) poses a significant immediate and on-going threat to the pine forests of Alberta. Co-ordinated and effective forest management planning and operations are needed to control the current infestation and reduce the risk of future MPB infestations.

2.0 Area of Primary Concern

The area of primary concern is the Upper and Lower Foothills Natural Sub-regions as shown on Map 1. Regions of the province outside of this area will continue to be monitored for MPB activity but there are currently no plans to require additional strategies or tactics in these areas.

3.0 Levels of Importance/Urgency for MPB Management Strategies

The first three objectives in the MPB Action Plan describe strategies for addressing MPB, and each of these strategies have different levels of importance and urgency for implementation as follows:

i. **Control (Beetle) Strategy** *(Highly Important and Highly Urgent)*
When MPB infestations are detected, the goal is 100% control before the mature adults fly.

ii. **Prevention (Pine) Strategy** *(Highly Important and Very Urgent)*
The objective is to modify the age class structure of pine forests to reduce the long-term susceptibility to MPB attack. The planning for prevention strategies is comprehensive and execution will take 5 to 20 years. It is very important to complete satisfactory planning throughout the area of primary concern by May 1, 2009.

iii. **Salvage Strategy** *(Very Important and Urgent)*
In the event there is a MPB outbreak in all or part of the area of primary concern that is not manageable with either the control or prevention strategies, salvage activities directed at maximizing the economic recovery within affected areas will be initiated.

4.0 Predictive Models

The stand susceptibility index (SSI) is a measure of a stand's capacity to produce beetles (i.e. new populations of MPB in the next year) in the event it is attacked, however it does not serve as an indicator of the probability that the stand will be attacked. The index will be used to set priorities for MPB control and prevention activities. Alberta's basic assumption is that all pine is susceptible to MPB infestation and is under serious threat.

The Canadian Forest Service Shore/Safranyik Stand Susceptibility Index (SSI) Model has been adapted by Forest Management Branch (FMB) for use with Alberta Vegetation Inventory (AVI) data. This adaptation of the model (Alberta Stand Susceptibility Index, ASSI) is available from FMB upon request. The susceptibility index for a given stand is based on four variables: relative abundance of susceptible pine basal area in the stand, age of dominant and co-dominant live pine, density of the stand, and the climatic suitability of the stand.

Stand susceptibility index (SSI) is calculated using the following formula:

SSI = P x A x D x CF

where:

P = percentage of susceptible pine basal area
A = age factor
D = density factor
CF = climatic factor

The SSI value without Climatic Factor (SSI) identifies susceptible stands based exclusively on stand characteristics and in conjunction with the climatic factor will be used to prioritize MPB control and prevention activities. In addition, compartments will be prioritized based on the anticipated risk of infestation (see Table 1).

Credible use of current MPB susceptibility models is essential. The model outputs will rank MPB susceptible stands, however, pragmatic logistical considerations (e.g. economics, use of wood, debris disposal, access) will affect harvest plans and schedules.

5.0 Control (Beetle) Strategy

If MPB is present Alberta will authorize one of two levels of treatment as described in the Action Plan as follows:

i. Level I – single tree treatments
ii. Level II – stand level treatments

Level I treatments will be executed by the Forestry Division; Level II treatments will be executed by the forest industry, pursuant to approvals by the Area Manager. Generally, infestations on the active landbase (see *Alberta Forest Management Planning Standard, Annex 1, section 3.2*) will be addressed using Level II treatments, except where special habitat considerations may require use of Level I treatments. Generally, infestations on the passive landbase will be addressed using Level I treatments. Logistical issues will be resolved annually through the operational planning process.

6.0 Criteria for Implementing Level II Treatments

If any level of active MPB infestations are confirmed by a FHO or Regulated Forestry Professional (RFP), Level II treatments should be engaged, subject to the resolution of pragmatic logistical issues for the upcoming operating year.

Key operating strategies will be:

i. Harvest complete stands – experience elsewhere has shown multiple entries has been ineffective and inefficient.
ii. Utilized timber will be AAC chargeable.
iii. Surveys acceptable to the Forestry Manager are required to determine the extent of the infestation:
    a. To resolve the extent of the Level II treatment
    b. To determine the eligibility for dues relief.
    c. To address residue management
iv. Treatments should be completed before adult MPB fly.
v. Operations will follow the Ground Rules Addendum for Mountain Pine Beetle.
vi. All pheromone use must be approved by the Forestry Manager.

7.0 Prevention (Pine) Strategy

Alberta's goal is to alter the current age-class structure of susceptible pine forests to increase their long-term resistance to MPB infestations. This Pine Strategy requires that Forest Management Plans (FMP) be prepared/amended to address this issue.

Key targets for these Pine Strategy FMPs are:

i. New or amended Pine Strategy FMPs must be completed by May 1, 2009.
ii. The goal is to reduce the area of susceptible pine stands in the Rank 1 and Rank 2 categories in the Sustained Yield Unit (SYU) to 25% of that projected in the currently approved FMP at a point twenty years into the future.

The 25% target may not be attainable if the forecast effects on other resource values or other stakeholders is too significant. However, given the high impacts of a MPB outbreak, Alberta is prepared to accept increased impacts on other resource values/stakeholders to reduce the risk of an outbreak.

Pine Strategy FMPs may have significant impacts on resource values and stakeholders in the FMA/FMU. Consequently it is necessary to follow the planning processes described in the *Alberta Forest Management Planning Standard* for new plans, or as described in this interpretive bulletin for amendments. Although expediency is needed, planning activities must be thorough and diligent while not creating unnecessary extra work

To fully appreciate the range of potential future forest conditions, each Pine Strategy FMP shall compare key outcomes (see section 8.1 below) in three management scenarios,

i. The current approved FMP;
ii. The proposed Pine Strategy FMP; and
iii. The MPB Outbreak. Alberta will provide guidance for model inputs for this scenario.

8.0 Amendments to Approved FMPs

Amendments are expected where new FMPs are not scheduled to be completed prior to May 1, 2009. An amended FMP uses many of the same inputs and assumptions as the approved FMP (i.e. net landbase, yield projections, regeneration transitions), however, generates modified AACs, flow regimes or spatial harvest sequences to implement pine management strategies.

Each FMP amendment submission shall fully document any changes to inputs and assumptions that were used in the approved FMP.

8.1 FMP Amendment Submission Requirements

Companies shall describe how the amendment affects the requirements of the *Forest Management Planning Standard, Annex 1, standard 5.6i, (a – e).*

Guidelines to address this standard are as follows:

a) Alberta recognizes that significant changes to approved harvest sequences will be necessary to reduce the susceptibility of pine forests to MPB attacks. It is essential to create an acceptable spatial harvest sequence to implement the Pine Strategy, however it is recognized that Level II