

**February 2008**

## Mountain Pine Beetle Initiative

In December 2007, the Forest Resource Improvement Association of Alberta (FRIAA) selected the project “*Monitoring and Decision Support for Forest Management in a Mountain Pine Beetle Environment*”, proposed by the Foothills Growth and Yield Association (FGYA), for support under FRIAA’s Open Funds initiative.

The focus of the initial three-year project is the development of a decision support tool that integrates the results of the baseline assessments, monitoring and projections with expert knowledge of collaborating research managers and decision-makers. The decision support tool will provide:

- Quantitative stand-level projections for predominant post-attack conditions and management intervention alternatives that planners can incorporate quickly into landscape-level and timber supply forecasts;
- Silvicultural guidelines for mitigating negative impacts on mid and long-term timber and cover supply.

The project is being run through, and partially funded by, the Foothills Model Forest (FtMF) MPB Ecology Program. It contributes to two of the three top priority subject areas of the MPB Ecology Program:

- Natural disturbance stand dynamics research, which includes the relationship of fire and pine beetle
- Understanding the growth and yield of pine beetle infected stands



(Alberta government PSP cluster infested by MPB  
Photo courtesy of Weyerhaeuser Company, 2006)

The project consists of four activity groups: baseline assessment, projections, monitoring and synthesis. A monitoring framework of 240 permanent sample plots, selected from over 4000 plots maintained by member companies and the Alberta government, will be the basis for the study. The plots represent a unique opportunity to link historical information to immediate and pressing questions associated with the impacts of MPB. Baseline assessments will be conducted on the selected plots in susceptible stand types and will augment standard mensurational data already collected. Monitoring development of the plots if and when they are attacked by MPB will follow. Models such as GYPSY, MGM and TASS will be used to develop projections of growth performance of secondary structure and post-attack regeneration.

Selection of plots for baseline assessment and monitoring is in progress. The process involves choosing an “ideal” target sample of 240 plots within 8 ecological strata that cover the predominant range of soil nutrition and moisture regimes occupied by lodgepole pine in Alberta. The target sample may have to be adjusted to ensure that plots are located in areas recently infested or with high risk of imminent attack. Project partners have been asked to provide information on their fire-origin plots, including geographic location, last measurement date, AVI type, ecosite, MPB hazard rating, and available information on actual MPB infestation and risk. Based on this information, and recommendations from partners, the project technical management committee will make a preliminary selection of the candidate plots. The selection will be referred back to each partner for review and refinement before finalization of the sample.



## Foothills Growth & Yield Association Quicknote #8

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Don Podlubny, the FtMF MPB Ecology Program Manager, will be project manager. Dick Dempster, the Research and Development Associate of the FGYA, will provide technical direction and coordination of all scientific and technical services and liaison with technical representatives of the FGYA.

Partners in the program include the nine member companies of the FGYA, providing access to their PSP databases as well as other advice and support as the project proceeds; ASRD Forest Management Branch, providing access to its permanent sample plots as well as the time of specialists in silviculture, ecology and biometrics; Canadian Forest Service Pacific Forestry Centre, whose scientists will conduct dendrochronological analyses and projection of post-attack stand dynamics under various MPB scenarios. Design and analysis of understorey and special vegetation assessments will be assisted by Dr. Ellen Macdonald of the University of Alberta. Additional work will be carried out by forestry consulting companies selected through competitive bid.

The mission and mandate of the FGYA are to continually improve the assessment of lodgepole pine growth and yield in managed stands by:

- Forecasting and monitoring responses to silvicultural treatments;
- Facilitating the scientific development and validation of yield forecasts used by members in managing their tenures;
- Promoting knowledge, shared responsibility and cost-effective cooperation.