



Pulling it all together: Urgency

by Bruce Rogers, Mountain Pine Beetle Extensionist

When the mountain pine beetle (MPB) first struck with any significance in British Columbia, many, especially those whose livelihoods depend on forestry, were apprehensive about its potential impact on timber supply areas (TSAs). The initial reaction was to try and contain what many believed were “isolated” outbreaks. Ten years on, it has become clear that controlling the spread of MPB with harvesting has simply left us “chasing the beetle.”

Research suggests that the epidemic’s broad scale is due to the abundance of contiguous mature host-tree lodgepole pine-leading forest and the absence of the extreme subzero winter temperatures needed to control larval population growth. In the past, preventative techniques such as beetle-proofing stands to increase tree vigour and reactionary approaches such as snip and skid, fall and burn, and pheromone-baiting operations did prove effective for managing MPB outbreaks. It is understandable, then, that similar approaches influenced initial control efforts and guided the funding and direction of early research.

With the realization that within 10 years the beetle, at its current rate of spread, will have killed more than 80% of the mature lodgepole pine in BC and that the projected non-recoverable merchantable timber losses could total 206 million m³ (Eng *et al.* 2006), the public, industry, and government understand the impacts go far beyond affecting just timber supply. It is now obvious that when the dust clears from the current MPB-salvage harvesting uplift in allowable annual cuts (AAC), and shifts occur in AAC for numerous TSAs throughout the province, there will be diverse and complex socio-economic and ecological fallouts. These effects will require equally diverse research approaches to develop sustainable management strategies that address the legacy of the current MPB pandemic on the landscape and society of British Columbia.

Both the volume and multiplicity of questions stemming from this current crisis point to an urgent need for synthesis of research. Addressing this is a recent publication of the Canadian Forest Service (CFS), “The Mountain Pine Beetle: A Synthesis of Biology, Management, and Impacts on Lodgepole Pine,” edited by **Les Safranyik** and **Bill Wilson**. It is available as a book or CD ROM.

The publication is presented in three parts—1) Biology, 2) Management, and 3) Socio-economic Impacts—and is a useful resource for forest practitioners, researchers, and students.

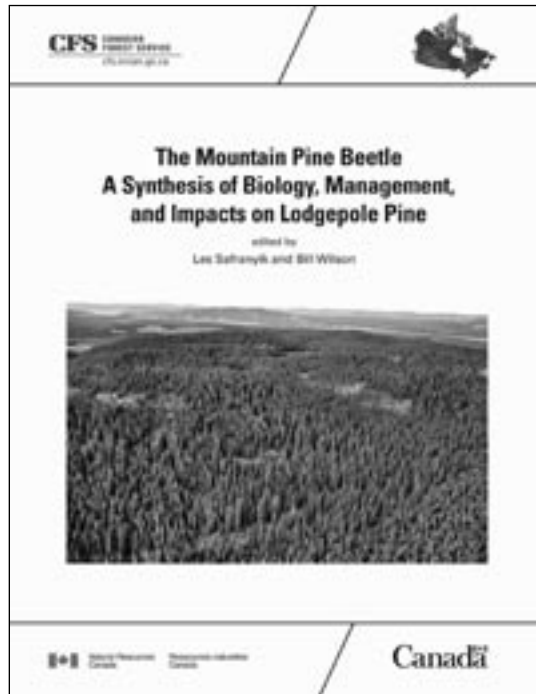
Part 1—Biology:

The first three chapters of the synthesis summarize information on the biology of the beetle, the causes for beetle outbreaks, host-tree susceptibility, the size of outbreaks in relation to weather variation, and MPB

influences on stand species composition and structure. A better understanding of these factors helps managers plan appropriate silvicultural systems to address host-tree susceptibility and to predict future stand characteristics. The ability of forest landscape planners to predict and/or influence future stand conditions allows for greater success in realizing long-term multiple resource objectives.

Part 2—Management:

This section discusses preventative and direct control strategies for managing beetle populations, along with a range of options for detecting and monitoring MPB at a variety of scales. It concludes by reviewing some of the available decision-support tools for susceptibility and risk rating. With the development of more effective management tools, forest and landscape managers will have an increased capacity to monitor, predict, prevent, and/or control future outbreaks, resulting in more appropriate scenario planning and more effective operational application.



Courtesy of Canadian Forest Service

The Mountain Pine Beetle: A Synthesis of Biology, Management and Impacts on Lodgepole Pine, edited by Les Safranyik and Bill Wilson of the Canadian Forest Service.



for synthesis prompts CFS publication

Part 3—Socio-economic Impacts:

Planners and policy makers need decision-support tools, and forecasters of our future timber supply need stand dynamics information—this meant that much of the initial research on the current MPB outbreak addressed operational and ecological questions. However, because the economies of many communities rely on timber harvesting, particularly small communities in central to north-central BC, answers to questions about the socio-economic impacts of shifts in the AAC and changes in product quality are also needed. Part three of the synthesis examines current knowledge on the properties and marketability of post-MPB solid wood products, addresses critical knowledge gaps and research needs for the use of MPB fibre in the pulping process, and examines the forest economics literature for multiple perspectives on current- and post-MPB economic strategies.

This document addresses numerous issues and, as most research does, begs even more questions. Research funded by the British Columbia Forest Investment Account—Forest Science Program and Natural Resources Canada is proceeding at an incredible rate to meet the immediate and urgent forest management and socio-economic needs of

the province. As new MPB-research findings are presented, FORREX will provide venues that synthesize new information and technology and make it available to forest practitioners and the general public. The Mountain Pine Beetle Information Network (<http://www.forrex.org/mpb>) lets users search a bibliographic warehouse containing more than 1,200 records of MPB-related literature citations and events (see article on page 12–13). 🌲

For more information about “The Mountain Pine Beetle: A Synthesis of Biology, Management and Impacts on Lodgepole Pine,” contact: http://bookstore.cfs.nrcan.gc.ca/catalog_e.php?catalog=26116 or http://mpb.cfs.nrcan.gc.ca/beetlewatch/May-2006_e.html

For FORREX’s Natural Resources Information Network (NRIN), a virtual metadata library where the users fill the shelves, go to <http://www.forrex.org/>

For the McGregor Model Forest Bark Beetle Links, which contains links to key sites with information on MPB, go to <http://www.barkbeetlelinks.ca>

Reference cited

Eng, M., A. Fall, J. Hughes, T. Shore, B. Riel, A. Walton, and P. Hall. 2006. Provincial-Level Projection of the Current Mountain Pine Beetle Outbreak: Update of the projection of non-recovered losses for the reference management scenario. Based on the 2005 Provincial Aerial Overview of Forest Health and revisions to “the model” (BCMPB.v3). BC Ministry of Forests and Range, Victoria, BC, 7 p. <http://www.for.gov.bc.ca/hre/bcmpb/BCMPB.v3.ReferenceScenario.Update.pdf>