

The Black Hills Regional Mountain Pine Beetle Strategy

May 7, 2012 (Revised 10/17/2014)



Figure 1 - Thinned trees (center of photo) effective in slowing beetle attack. (B. Wudtke, 2013).

A collaborative "all lands" approach to combating the mountain pine beetle in the Black Hills.

Mission

To reduce and mitigate the current mountain pine beetle epidemic towards endemic levels that promotes long-term economic, social and ecologic sustainability of the Black Hills region.

Introduction

The Black Hills Regional Mountain Pine Beetle Strategy (RMPBS) is a five year strategy that identifies the response to the current mountain pine beetle (MPB) epidemic in Wyoming and South Dakota. This epidemic has grown exponentially and continues to require a comprehensive and strategic approach that identifies goals and objectives and prioritizes mitigation efforts through an Action Plan. The driving cause behind this epidemic continues to be large acreages of dense, mature trees.

Many forest resources and socio-economic values are at risk, including watersheds, forest ecosystems, high-value & sensitive sites, public safety, state & local economies, recreation, wildlife, tourism, aesthetics, and sustainable long-term fiber supply for communities dependent on forest resources. In addition, pine stands killed by MPB will have increased fuel loading creating the potential for forest fires that are larger, more intense, and less predictable.

The potential consequences of the current MPB epidemic make development and implementation of comprehensive mitigation measures urgent and complex. It will be impossible to achieve long-term desired future conditions unless all stake holders commit and remain committed to a comprehensive and aggressive strategy for treating the current epidemic. The goal of the RMPBS is not to eradicate the MPB from the Black Hills, but instead reduce the epidemic populations towards endemic levels.

As the result of the periodic Conservation Leader meetings, a diverse subcommittee volunteered to draft a comprehensive strategy to address the current MPB epidemic, to be agreed to by the larger Conservation Leaders group. This document is referred to as the Black Hills Regional Mountain Pine Beetle Strategy (RMPBS).

Background

Landownership

The greater Black Hills region comprises approximately 1.5 million forested acres of interspersed federal, state, and private lands according the most recent Forest Inventory and Analysis numbers. The largest landownership is the Black Hills National Forest (BHNF), comprising 899,000 acres of forestland, followed by private lands at 475,000 acres of forestland, State lands of Wyoming and South Dakota at 99,000 acres of forestland, and the Bureau of Land Management at 24,000 acres of forestland. Ponderosa pine is the predominant tree species throughout all ownerships in the Black Hills.

The mountain pine beetle (MPB), *Dendroctonus ponderosae*, is a native insect to the Black Hills, first discovered in early 1900s. Historically the MPB existed in the Black Hills at endemic levels, with periodic outbreaks coinciding with favorable conditions. Thriving in the abundant even-aged, high density ponderosa pine stands, which are continuous across much of the Black Hills, the MPB mass attacks green host trees in late summer, boring under the bark and also spreading a blue-stain fungus, both of which can eventually lead to tree mortality if the mass attack was successful. The current MPB epidemic has affected more than 430,000 acres in the Black Hills National Forest area of SD and WY since 1996.¹



For the purposes of this strategy, endemic MPB levels are defined as 1-2 MPB attacked trees per 5 or more acres per year. Epidemic MPB levels are defined as several groups of four or more MPB attacked trees per group over 2-3 consecutive years, especially if the number of trees per group is increasing and groups are coalescing (Schmid 2007).

Strategies

There have been a number of helpful strategies produced over the past several years in response to the MPB epidemic plaguing the west. Each utilizes the best available science and research in formulating their respective goals, objectives, and strategies. These strategies are summarized below and components are incorporated into the RMPBS.

The Canadian Province of Alberta has developed a *Mountain Pine Beetle Management Strategy (2007)* based on the following three principles: (1) assessing the current status/risk of MPB spread; (2) determining immigration of beetle populations; and (3) pursuing achievable objectives which help determine beetle management priority zones at the provincial level. The three management zones are: leading-edge, holding, and salvage zones. Compared to the Black Hills, the Canadian situation differs in land ownership, industry capacity, laws, tree species, and management. While not the solution, the Alberta Strategy offers some very useful information and concepts that can be incorporated into the RMPBS.

The Black Hills Forest Resource Association, representing the forest products industries in Wyoming and South Dakota, has developed *The Black Hills and Surrounding Lands MPB Strategy*. It incorporates components from the Alberta Strategy and identifies three management zones: (1) Resiliency Zone, (2) Restraining Zone, and a (3) Recovery Zone along with treatment methods for each of these zones. The Resiliency Zone (R1) has the highest priority and would involve aggressive single or group tree removal from small infestation patches. The Restraining Zone (R2) focuses control efforts primarily on harvesting infested trees in patches too large for individual/group treatments, mainly through timber sales. The

¹From: <http://www.fs.usda.gov/detail/r2/forest-grasslandhealth/?cid=stelprdb5447305>

Recovery Zone (R3) focuses on hazardous fuel reduction, wildfire protection, and short term timber supply protection.

Both South Dakota and Wyoming State Forestry agencies have completed Statewide Forest Resource Assessments identifying common issues such as forest health, viability of the forest products industry, wildfire, wildland-urban interface, water quality and quantity, and invasive species. Many of these issues have been addressed in the RMPBS.

The U.S. Forest Service's *Western Bark Beetle Strategy (2011)*, addresses three facets of the bark beetle problem: human safety, forest recovery, and long-term recovery. While appropriate to many forests impacted by the MPB throughout the West, this broad strategy falls short in fully addressing the unique situations present in the Black Hills.

More locally, the Black Hills National Forest prepared the *Black Hills National Forest Mountain Pine Beetle Strategy (2/15/2012)*, which builds on the *Western Bark Beetle Strategy*, and includes more specific objectives pertinent to the Black Hills. The strategy includes components from the Alberta Strategy identifying three management zones: Safety Zone, focusing on people and community infrastructure; Recovery Zone, addressing re-establishment of healthy forests damaged by MPB; and the Resiliency Zone, focused on preventing and mitigating future MPB outbreaks, mainly through green timber sales.

The Western Forestry Leadership Coalition (WFLC), whose members consist of state and federal forestry leaders, has produced a document titled *Across the Western Landscape: Priority Issues and Strategies for Western Forests (2011)*. It contains a six-point plan for a way forward in successful implementation of a forest action plan. The six points are:

1. Strengthen partnerships and collaborative approaches
2. Build adequate and flexible capacity and funding
3. Capitalize on "co-benefits"
4. Actively manage all forest lands
5. Support research to inform science-based decision making
6. Gain support through effective engagement

This strategy, while not specific to MPB, uses these six points to formulate a strategy that focuses on conserving and managing working forest landscapes, protecting forest from threats and enhancing public benefits from forests and trees. All of these components are relevant and integrated into the RMPBS.

Current Actions

Over the last 15 years of the epidemic, there has been a lot of good work done in reducing the negative impacts associated with this epidemic. While these collaborative efforts have substantially improved, the treatments have slowed, but not stopped the spread of the epidemic as it continues to expand annually. Following, is a summary of some of the most recent efforts being conducted that can increase future success.

The State of South Dakota has invested considerable funding and treatment effort into MPB treatment in Custer State Park that has been very successful. The State is also assisting private landowners throughout the Black Hills. The extent of technical assistance, infested tree identification, and cost-share programs are contingent on funding. More information is available at www.beatthebeetles.com .

The State of Wyoming has conducted similar efforts. In cooperation with over twenty entities, State appropriated dollars are leveraged with Federal and private dollars to treat infested trees across all ownerships. Landowners are not charged for this service, but are strongly encouraged to apply long term management practices to develop resilient forests. Beyond direct control, educational programs, management plan development, and timber management practices are important components of the program. Wyoming State Forestry Division, Weston and Crook County Conservation Districts,



Figure 2 - Industry, Forest Service and private landowners discuss mountain pine beetles and forest management.

Weston and Crook County Weed and Pest Districts, Weston and Crook County NRCS offices, Weston and Crook County Road and Bridge Departments, Neiman Timber Company, Crook County Office of Emergency Management, University of Wyoming Extension Service, Weston County Fire Protection District, Wyoming Tree Farm Committee, Bureau of Land Management, Hell Canyon and Bearlodge Ranger Districts of the Black Hills National Forest, Wyoming Governor's office, private landowners, and others are committed to a unified campaign to protect the forest resource in Wyoming, and the benefits it creates. More information is available at www.lands.state.wy.us .

Counties within the Black Hills have assisted in the MPB mitigation efforts through agreements with the states, Black Hills National Forest, and private landowners. Counties have used various funding sources to perform on the ground mitigation practices. Their mitigation practices on BHNF have focused along private lands and priority landscape treatment areas often within pre-thinned timber sale areas. Public safety is being addressed by the counties as well, through the removal of dead MPB trees along road rights-of-way.

The BHNF continues to provide timber sale projects that focus on pro-active thinning. This type of landscape thinning at the leading edge the MPB infestation is the most effective treatment for MPB, reducing the susceptibility to future infestation. Another significant effort is the sanitation of infested trees within current timber sale boundaries. This helps in reducing beetle numbers and the inherent spread to adjacent timbered stands. The agency does preventive spraying in certain recreation areas and invests substantial funding in non-commercial thinning of sapling and pole stands to reduce fire and insect hazard in the long run. The BHNF is implementing the *Mountain Pine Beetle Response Project* (12/10/2012). This project is designed to allow Integrated Pest Management techniques in high risk

stands on the forest that were not previously covered for treatment under other NEPA decisions. This project is helping to streamline efforts in responding to MPBs in at-risk stands.

The Black Hills has prominent forest industry that contributes substantially to the economic and social fabric of local communities. The 25-35,000 acres of annual treatment completed by timber purchasers and contractors has been essential to slowing the epidemic. With the ability to thin and treat only a portion of acres across the forest, it is important that these efforts are targeted through this strategy to be as effective as possible.

Purpose

The RMPBS is a comprehensive strategy that uses the various strategies, assessments and ongoing activities mentioned above, but is modified to account for the unique situation surrounding the MPB epidemic in the Black Hills area and its affected stakeholders. This strategy defines goals, objectives and actions to collaboratively address the MPB epidemic across all ownerships in the Black Hills. While several variables exist such as funding at the local, state and federal levels, the intent is to create strategic framework that results in the effective expenditure of funds.

Goals, Objectives, Actions

Goal 1 - Reduce mountain pine beetle populations to endemic levels in strategic areas.

Objective 1.1 – Annually develop and coordinate the allocation of human, financial, physical resources to federal, local, state governments/agencies and private landowners to combat current and future infestations

Action 1.1.1 – Develop and support a list of accepted MPB reduction management tactics for the Black Hills region. Ongoing

Action 1.1.2 – Identify and leverage traditional and non-traditional federal, state, local and private funding sources in addition to current levels. Ongoing

Action 1.1.3 – Identify and leverage human and physical resources to accomplish goals and objectives. Ongoing

Action 1.1.4 – Draft, support, and implement proven and beneficial policies, processes and programs specific to the MPB epidemic. Ongoing

Objective 1.2 - Establish and maintain regular and timely communication between interested local, state, private, tribal and federal entities

Action 1.2.1 – Retain a MPB Coordinator to serve as an information hub and facilitator for agencies, organizations and other stakeholders involved in MPB mitigation efforts. The MPB Coordinator will assist in developing cooperative efforts whenever possible and with respect to each entity's policies, goals and objectives. Ongoing

Action 1.2.2 – Maintain a MPB Working group of interested parties to facilitate the efficient implementation of group activities as outlined in Objective 1.3. Ongoing

Action 1.2.3 – Provide education and public outreach regarding the issues, opportunities, resources risks and other information on the MPB epidemic. Ongoing

Action 1.2.4 – Continue Conservation Leaders meetings and further facilitate communications between affected parties including SD and WY elected officials. Ongoing

Objective 1.3 – Create and review an annual action plan for the purpose of guiding MPB suppression efforts.

Action 1.3.1 – The MPB Working Group will create and review an annual MPB Action Plan identifying specific agency and private entity activities to treat MPB populations for that season and coordination among agencies and private industry. Ongoing

Action 1.3.2 – Develop and review the Annual MPB Strategic Map to accompany the Annual MPB Action Plan. This map will identify and prioritize specific areas for MPB treatment and will use available information including recent Aerial Insect and Disease Surveys, air photo fader analysis, ground marking data, and/or other technologies. Ongoing

Action 1.3.3 – MPB Working Group will report annually on the progress of goals and objectives. Ongoing

Goal 2 – Create and maintain healthy forests with diverse forest stand conditions that are resilient to future MPB epidemics and catastrophic wildfires.

Objective 2.1 – Implement silvicultural practices to improve forest health and reduce susceptibility to future MPB infestations.

Action 2.1.1 - Increase diversity of tree age, size, and species, and reduce stand density where necessary to increase resistance to future MPB infestations. Ongoing

Action 2.1.2 - Perform MPB sanitation and suppression efforts to protect individual trees and stands within a landscape context. Ongoing

Objective 2.2- Implement actions to conserve and restore natural resources during and following this epidemic.

Action 2.2.1 – Treat noxious weeds within areas that have been impacted by MPB Ongoing

Action 2.2.2 – Reforest/reseed selected areas of disturbance where needed with native vegetation. Ongoing

Action 2.2.3 - Provide for conservation of sensitive habitats where the MPB is active. Ongoing

Objective 2.3 - Maintain sufficient quantity and quality of water in local community watersheds.

Action 2.3.1– Use Best Management Practices during MPB treatments to protect watersheds from sedimentation, excessive runoff and flooding caused by large scale disturbances. Ongoing

Action 2.3.2 – Monitor research on watershed effects caused by the MPB. Ongoing (note: previous Action 2.3.2 to map watersheds was deleted).

Goal 3 – Ensure the viability of the current and/or expanded forest products infrastructure within the Black Hills region.

Objective 3.1 – Maintain a sustainable timber supply based on needs to existing infrastructure.

Action 3.1.1 – Utilize timber sales to thin over-stocked stands of ponderosa pine on federal, state and private lands based on MPB Action Plan and Map. Ongoing

Action 3.1.2 – Utilize timber sales to remove MPB infested trees (sanitation). Ongoing

Action 3.1.3 – Provide a means of communication regarding harvesting activities between the BHNF, States, Counties and current/potential purchasers. Short term

Action 3.1.4 - Develop and implement timber sale programs to supply the current forest products industry. Ongoing

Objective 3.2 – Support utilization of woody material that is currently being under-utilized.

Action 3.2.1 – Promote and develop new markets and a marketing strategy to utilize woody material - specifically underutilized and blue-stain ponderosa pine. Long term

Goal 4 - Ensure people and community infrastructures are protected from the hazard created by standing dead trees killed by MPB and the resulting elevated hazardous fuels which lead to catastrophic wildfires.

Objective 4.1 – Mitigate falling tree hazards to people and community infrastructure in areas identified in the annual MPB action plan.

Action 4.1.1 - Remove hazard trees along the highest priority roads, emergency routes, trails, power lines, recreation areas and facilities. Ongoing

Action 4.1.2 - Develop and implement a mechanism to adequately warn the public of falling tree hazards in untreated areas or sites. Ongoing

Action 4.1.3 - Coordinate with local utility companies to plan and facilitate treatments of dead and infested trees adjacent to infrastructure. Ongoing

Objective 4.2 - Decrease risk of catastrophic fire associated with elevated fuel loadings following beetle infestation, particularly in the Wildland Urban Interface.

Action 4.2.1 - Implement fuel break treatments in strategic locations that complement Community Wildfire Protection Plans (CWPP). Ongoing

Action 4.2.2 - Develop an integrated fuel reduction plan that assesses and implements fuels reduction projects in MPB killed stands across ownerships. Long term

Action 4.2.3 – Provide information and encourage private landowners to implement *Firewise* principles on their lands. Ongoing

“Black Hills Restoration Strategy” – The Conservation Leader group considered a proposal on 5/15/14, and adopted on 10/17/14, a recommendation as follows: the Conservation Leaders develop a *“Black Hills Restoration Strategy”*, or as appropriately entitled, when conditions shift from an emphasis on MPB suppression to an emphasis on healthy forests, fire hazard and public safety. Such a restoration strategy, continuing the collaborative approach, may include different entities and disciplines than the current BHRMPB Strategy. Objectives 4.1, 4.2 and perhaps other objectives and their actions would shift to a new strategic document.

Authorities and Limitations

The Black Hills Regional Mountain Pine Beetle Strategy (RMPBS) has no legal authority and is not recognized as a corporate entity. Individual partners are not bound by any decision of the RMPBS to expend financial resources, exceed legal limitations imposed by applicable statutes, or limitations imposed by individual governing boards.

We the undersigned, in the interest of the health of the Black Hill’s forested lands, the protection of the Black Hill’s forest-dependent communities, and in review and understanding of the considerations put forward by this document agree to voluntarily participate, in good faith, in the Black Hills Regional Mountain Pine Beetle Strategy. Furthermore, we commit to working with one another in the spirit of cooperation and collaboration in mutual respect to each other to advance the goals set forth in the strategy.

The following Conservation Leaders adopted the *Black Hills Regional Mountain Pine Beetle Strategy* (dated 5/7/2012):

- 1) Meade County Commission
- 2) Baker Timber Products, Inc.
- 3) USDA-Forest Service, Black Hills National Forest
- 4) Weston County Commissioners
- 5) Rare Elements Resources, Inc.
- 6) William & Patricia Cafruny, Canyon Lake Hts. (homeowners)
- 7) Lawrence County Commissioners
- 8) Pennington County Weed and Pest Board
- 9) Crook County Commissioners
- 10) Black Hills Resource Conservation and Development Association, Inc.
- 11) Save Our Black Hills Coalition
- 12) Custer County Conservation District
- 13) James R. Johnson, PhD, South Dakota State University (Canyon Lake Hts., homeowner)
- 14) Neiman Enterprises, Inc.
- 15) Pennington County Commission
- 16) Dakotas Society of American Foresters
- 17) Rapid City Area Chamber of Commerce
- 18) South Dakota Department of Agriculture, Division of Resource Conservation & Forestry
- 19) Bureau of Land Management – South Dakota
- 20) Bureau of Land Management - Wyoming

- 21) Weston County Natural Resource District
- 22) Wyoming Farm Bureau Federation
- 23) Black Hills Forest Resource Association
- 24) Thomas and Ruth Carol Udager (homeowners, Rapid City)
- 25) E. Pennington Grazing District
- 26) Association of National Grasslands
- 27) Weston County Weed and Pest
- 28) Custer County Commissioners

This ***Revised Black Hills Regional Mountain Pine Beetle Strategy*** was prepared by the Black Hill Regional Mountain Pine Beetle Working Group and presented and discussed at a meeting of Conservation Leaders on May 16, 2014. It was formally approved at a Conservation Leader meeting on October 17, 2014.