

The Black Hills Regional Mountain Pine Beetle Strategy

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The 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 to endemic levels that allows for economic, ecological, and social long-term 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) in both Wyoming and South Dakota. This epidemic is growing exponentially and requires 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 even-aged forest 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 more 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, but complex. Unless all stake holders commit to a comprehensive and aggressive strategy for treating the current epidemic, it will be impossible to achieve long-term desired future conditions in the Black Hills. The goal of the RMPBS is not to eradicate the MPB from the Black Hills, but instead reduce the epidemic populations down to endemic levels.

As the result of the periodic Conservation Leadership Meetings, a broad and diverse strategic subcommittee volunteered to draft a comprehensive strategy, to be agreed to by the larger Conservation Leadership Committee, addressing the current MPB epidemic and the stakeholders involved. The following document outlines this document, to be 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 single largest landowner 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 & South Dakota at 99,000 acres of forestland, and the BLM 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. Traditionally MPB has 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. Since 1997, the current MPB epidemic has impacted parts of Black Hills, affecting more than 500,000 acres to date.

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 strategic implementation. Below these strategies are summarized and components from each 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. The Canadian model differs from the current situation in the Black Hills with differences including land ownership, industry capacity, laws, tree species, management, etc. While not the solution, the Alberta Strategy offers some very useful information and concepts that are able to be incorporated into the RMPBS.

The Black Hills Forest Resource Association, representing the forest products industries in Wyoming & 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 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 & quantity, and invasive species. Many of these issues have been addressed in the RMPBS.

The U.S. Forest Service's *Western Bark Beetle Strategy*, US Forest Service (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 produced the *Black Hills National Forest Mountain Pine Beetle Strategy*, 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 not gone unnoticed, they have largely been unsuccessful in stopping 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 is assisting private landowners throughout the Black Hills by providing technical assistance in conjunction with a cost-share program for treatment of green-infested trees in select priority areas. Private landowners or groups of landowners that make up 10 or more acres can enroll in the program and have infested trees identified, marked, and mapped by State trained crews. Landowners are then able to participate in the State cost-share program which compensates landowners for treatment of the identified infested trees, based on the current State compensation rates by county, capped at \$10,000 for each landowner. More information is available at www.beatthebeetles.com .

The State of Wyoming has conducted similar efforts in a State cost-share program, by offering landowners the opportunity to have State crews survey their land for infested trees. Landowners can participate in a similar cost-share program that also compensates for the treatment of identified infested trees. More information is available at www.lands.state.wy.us.

Counties within the Black Hills are also responding to the MPB epidemic. Many of the Weed & Pest Boards have crews that are working with their respective States and municipalities, complementing the landowner assistance programs, both with financial and human resources. These crews have also undergone training and are working with the forest products industry and Black Hills National Forest, identifying infested trees within active timber sale boundaries, which are able to be treated through sanitation removal by on-site harvest crews. Some of these local programs are utilizing Secure Rural Schools funding for Title II & Title III funds.

A new idea, spearheaded by Lawrence County, involves implementing a County-wide ordinance against the MPB. Working with the BBNF, Lawrence County has signed a Participating Agreement with the BBNF that allows County Weed & Pest crews to enter BBNF lands to implement treatments against the MPB. Trees are identified on the ground and mapped, which allows sawyers hired by the county to implement treatments, primarily through cut & chunk methods, which treat infested trees on-site with no heavy equipment. Funding for these efforts has been through County funds and private donations, although other sources are being explored.

The BBNF is continuing to provide timber sales through projects that focus on proactive thinning which reduces the susceptibility to future infestation. Another effort includes sanitation of infested trees within current timber sale boundaries. This helps in reducing beetle numbers and the inherent spread to adjacent timbered stands.

The BBNF is continuing work on an Environmental Impact Statement (EIS) titled the *Mountain Pine Beetle Response Project*. This project contains two action alternatives and the overall purpose and need for the project is to allow Integrated Pest Management techniques in high risk stands on the forest that are not currently covered for treatment under existing NEPA documents. This project is designed to help streamline efforts in responding to MPBs in these at-risk stands.

The forest products industries in the Black Hills have also been helpful in slowing the epidemic. Unique to much of the West, the Black Hills still have a prominent forest industry that provides cost-effective treatments and contribute greatly to local economies. 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 aims to be a comprehensive strategy that shares much with the various strategies and ongoing activities mentioned above, but modified and developed to account for the unique and present

situation surrounding the MPB epidemic that plagues parts of Black Hills Region and its affected stakeholders. The purpose of this document is to build on the work done in past strategies and State Resource Assessments that charts a strategic course in accomplishing the mission of mitigating the current epidemic to endemic levels 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

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 – Establish a MPB Coordinator who will 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. Immediate

Action 1.2.2 - Create MPB Working group of interested parties to facilitate the efficient implementation of group activities as outlined in Objective 1.3. Immediate

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 Leadership Meetings and further facilitate communications between affected parties including SD & 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 manage 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. The annual MPB Strategic Map will identify and prioritize specific areas for MPB management efforts and areas identified for safety and fire mediation resulting from dead MPB trees. This map will use available information including recent Aerial Insect & Disease Surveys, other aerial mapping sources and ground marking data. 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 age and size classes in tree species and reduce stand density where necessary to increase resistance to future MPB infestations. Ongoing

Action 2.1.2 - Perform MPB sanitation & suppression efforts to protect individual trees and stands. Ongoing

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

Action 2.2.1 – Treat noxious weeds within timber sales or areas where the ground has been disturbed. Ongoing

Action 2.2.2 – Reforest/reseed large areas of disturbance with native vegetation. Ongoing

Action 2.2.3 - Provide for protection and resiliency in sensitive habitats against the MPB. Ongoing

Objective 2.3 - Maintain viable watersheds to local communities with sufficient quantity and quality.

Action 2.3.1– Annually incorporate Best Management Practices into mitigation efforts to protect watersheds from sedimentation, excessive runoff and flooding caused by large scale disturbances. Ongoing

Action 2.3.2 – Develop a map of areas where there could be potential watershed runoff problems. Ongoing

Action 2.3.3 – Monitor research on watershed effects caused by the MPB to implement best available science in affected watersheds. Ongoing

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; specifically through weekly emails, calls, and meetings. 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 – Explore and develop new markets and a marketing strategy to utilize woody material - specifically underutilized & 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. Short term

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

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

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.

Therefore 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 we, the undersigned, 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.