



Mountain Pine Beetle Suppression Initiatives FY2010-FY2015

South Dakota Department of Agriculture
Division of Resource Conservation & Forestry
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The Mountain Pine Beetle Suppression Initiatives supported the South Dakota Forest Action Plan by utilizing eight strategies identified therein to address threats to forest health. The program also utilizes strategies to address the threat of underutilization of woody biomass, wildfire, and over mature and dying trees as identified in the Forest Action Plan. These strategies achieve the “Protect Forests from Harm” and “Enhance Public Benefits Associated with trees and Forests” theme outlined by the State & Private Forestry (S&PF) National Priorities and Objectives.

Examples of the strategies outlined in this

document include, but are not limited to:

- Monitor forest insect and disease outbreaks.
- Provide forest management technical assistance to private forest landowners.
- Collaborate with other federal, state, and local agencies.
- Provide financial incentives to help private forest landowners implement healthy forest practices.
- Educate private landowners about the importance of forest management and availability of assistance.
- Manage suitable lands to achieve structurally diverse, healthy forests to develop more resilient forest landscapes.

FY10-FY15 Programs Overview

Over the course of FY2010 to FY2015 the South Dakota Department of Agriculture’s Division of Resource Conservation and Forestry (RCF) has been implementing several programs geared towards mountain pine beetle (MPB) suppression and forest health management in the Black Hills.

FY2010: RCF was awarded funding for the Black Hills Landscape-Level Forest Health and Fuels Reduction Initiative through the US Forest Service Redesign Competitive Grant process.

FY2012: The first year of implementation for Governor Daugaard’s Black Hills Initiative. The initiative was designed to provide much needed assistance to private landowners affected by the MPB epidemic administered

for a three year period.

FY2014: SD legislature appropriated \$2MM to be used for MPB suppression through the County Mountain Pine Beetle Initiative. The program was administered by RCF as a 2:1 cost-share grant to Black Hills area counties for suppression of the MPB epidemic across private, Federal, State land and county ROWs.

FY2015: SD legislature appropriated \$1.95MM for an all lands approach to suppress the MPB epidemic. This was used in concert with a \$300,000 competitive grant from the US Forest Service State & Private Forestry (SPF). MPB suppression efforts were focused on private, Black Hills National Forest (BHNF) lands and Custer State Park.

Components & Accomplishments

Prescribed Burning & Thinning

The Black Hills Landscape-Level Forest Health and Fuels Reduction Initiative concentrated on thinning forest stands, reducing fuel loading, and conducting prescribed burns where they could be done safely. Accomplishments:

- prescribed fire on 1,068 acres;
- burned 482 large machine slash piles and 3,900 small hand slash piles completing fuels reduction on 4,045 acres;
- created 88 acres of fuel break;
- thinned 1,582 acres of small diameter non-commercial trees;
- removed pine encroachment from 20 acres of meadow.

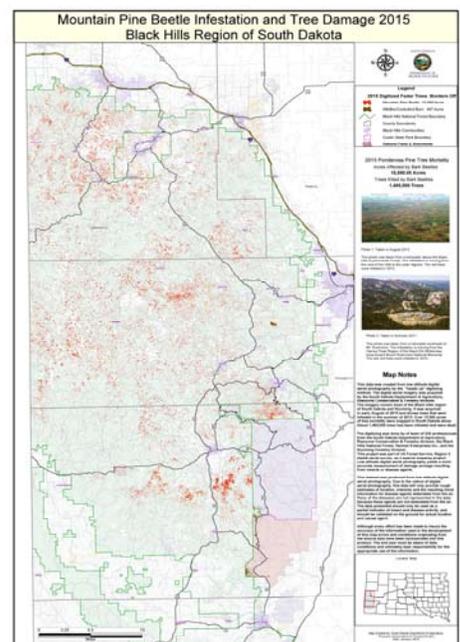
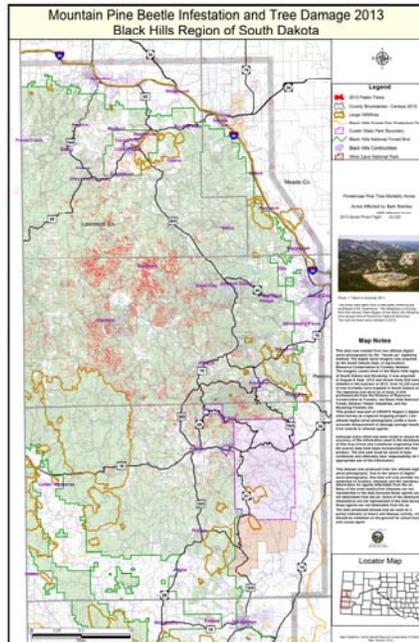
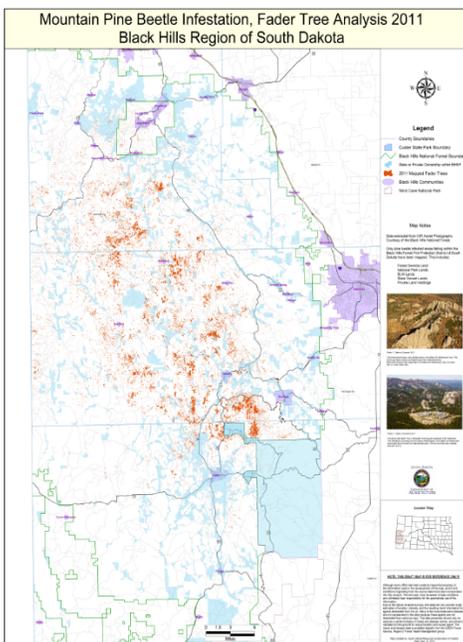


Aerial Photography and Faded Tree Analysis

SDDA coordinated an effort to obtain high resolution aerial photography to accurately assess the location, progression, and severity of the MPB epidemic. Contributors included Black Hills National Forest, National Park Service, Bureau of Land Management, Neiman Enterprises, and Weston County, WY. A team of analysts from RCF, BHNF, WY State Forestry, and Neiman Enterprises analyzed the photos.

Aerial photography allowed for a Fader Analysis of the BHNF (2011, 2013 and 2015 pictured below) to be conducted every year. MPB infestations occur in late summer; trees fade and die the following year. The table shows the number of acres of faded trees in the South Dakota and Wyoming Black Hills.

| Year Faded | Number of Acres |
|------------|-----------------|
| 2010 | 9,530 |
| 2011 | 20,044 |
| 2012 | 31,190 |
| 2013 | 33,985 |
| 2014 | 16,497 |
| 2015 | 16,963 |



Survey and Marking

The SDDA contracted with the South Dakota Association of Conservation Districts (SDACD) to provide personnel to locate and mark infested trees on private lands within priority areas. RCF provided training to SDACD crews, and trained crews from counties and cities that also surveyed properties to mark infested trees for FY2012. During the seasons of FY2013 - FY2015 the counties focused their efforts on Forest Service lands. SDDA worked on private and state lands in FY2013 and FY2014 and added surveying on Forest Service lands in FY2015.



Private Lands

| Fiscal Year | Trees Marked | Trees Treated | Acres | Percent Treated |
|-------------|--------------|---------------|---------|-----------------|
| 2011 | 42,083 | 35,078 | 18,760 | 83% |
| 2012 | 121,101 | 103,491 | 35,752 | 85% |
| 2013 | 96,731 | 82,087 | 30,023 | 85% |
| 2014 | 78,372 | 66,600 | 40,296 | 85% |
| 2015 | 40,148 | 33,757 | 21,677 | 84% |
| Totals | 378,435 | 321,013 | 146,508 | 85% |

State Lands

| Fiscal Year | Trees Marked | Trees Treated | Acres |
|-------------|--------------|---------------|--------|
| 2012 | 99,507 | 99,507 | 35,000 |
| 2013 | 35,028 | 35,028 | 27,408 |
| 2014 | 30,079 | 30,079 | 11,986 |
| 2015 | 25,174 | 25,174 | 16,803 |
| Totals | 189,788 | 189,788 | 91,197 |

FY2015 Black Hills National Forest

- Surveying and marking on BHNF land was completed as 100 or 300 foot buffers around private land or as timber sales.
- A total of 12,610 acres were surveyed, marking 65,218 infested trees.
- The Forest Service treated approximately 45% of the infested trees totaling 29,819 trees.



Education and Outreach

MPB workshops focusing on identification and treatment of infested trees, and preventive spraying were presented in the fall and spring throughout the Black Hills that attracted 1,500 landowners over the three years (FY12-FY14). County and city crews were trained in survey techniques and infested tree identification.

The website <http://www.beatthebeetles.com/> was developed for the public to get current and local information on MPB in the Black Hills.

Other Activities

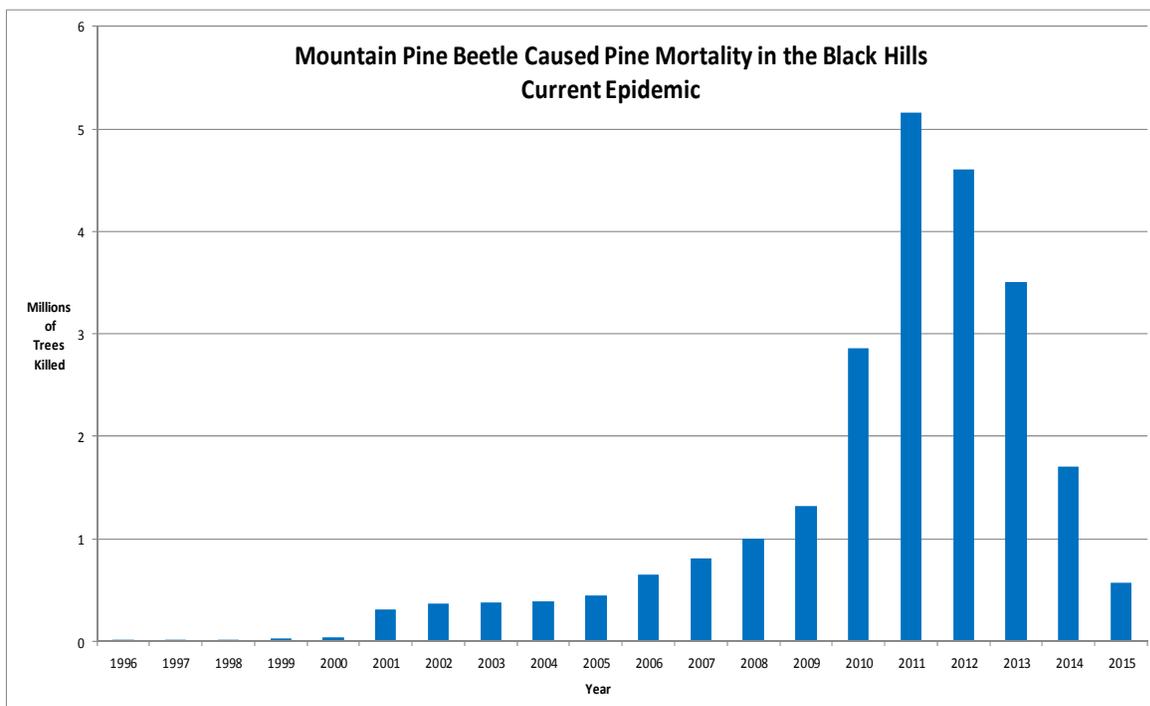
Dr. John Ball (SDDA) and Kurt Allen (USFS) continue to study new techniques for treating infested trees. Their results are used to ensure that we are using and recommending efficient and effective treatments for the Black Hills area. Also the Conservation Leaders Group and the Black Hills Regional Mountain Pine Beetle Working Group have been a major player in helping to strategize control for MPB, acquire more funding for the program and promote healthier forests.

In order to protect and preserve the relic stand of limber pine in Custer State Park from MPB infestation, Dr. Ball and the RCF have Verbenone pouches attached to the trees. These pouches contain a pheromone that deters the MPB from infesting the trees. In 2015 RCF began having accessible limber pine trees sprayed with pesticide to offer an additional measure of protection.



Infestation Trend

Fall sampling of currently infested trees across the Black Hills National Forest and Custer State Park indicate a continuing downward trend in the expansion of the epidemic.



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