



Forest Health Program Highlights

South Dakota Department of Agriculture
Division of Resource Conservation & Forestry
sdda.sd.gov (605) 773-3623

The Forest Health program supports 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 threats to wildfire, weeds and invasive species, water quality, and over mature and dying trees as identified in the Forest Action Plan. These strategies achieve the "Protect Forests from Harm" 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.
- Develop direct suppression and preventive management options to suppress forest insect and disease outbreaks.
- Support policies that prevent exotics from entering the State.

Executive Summary

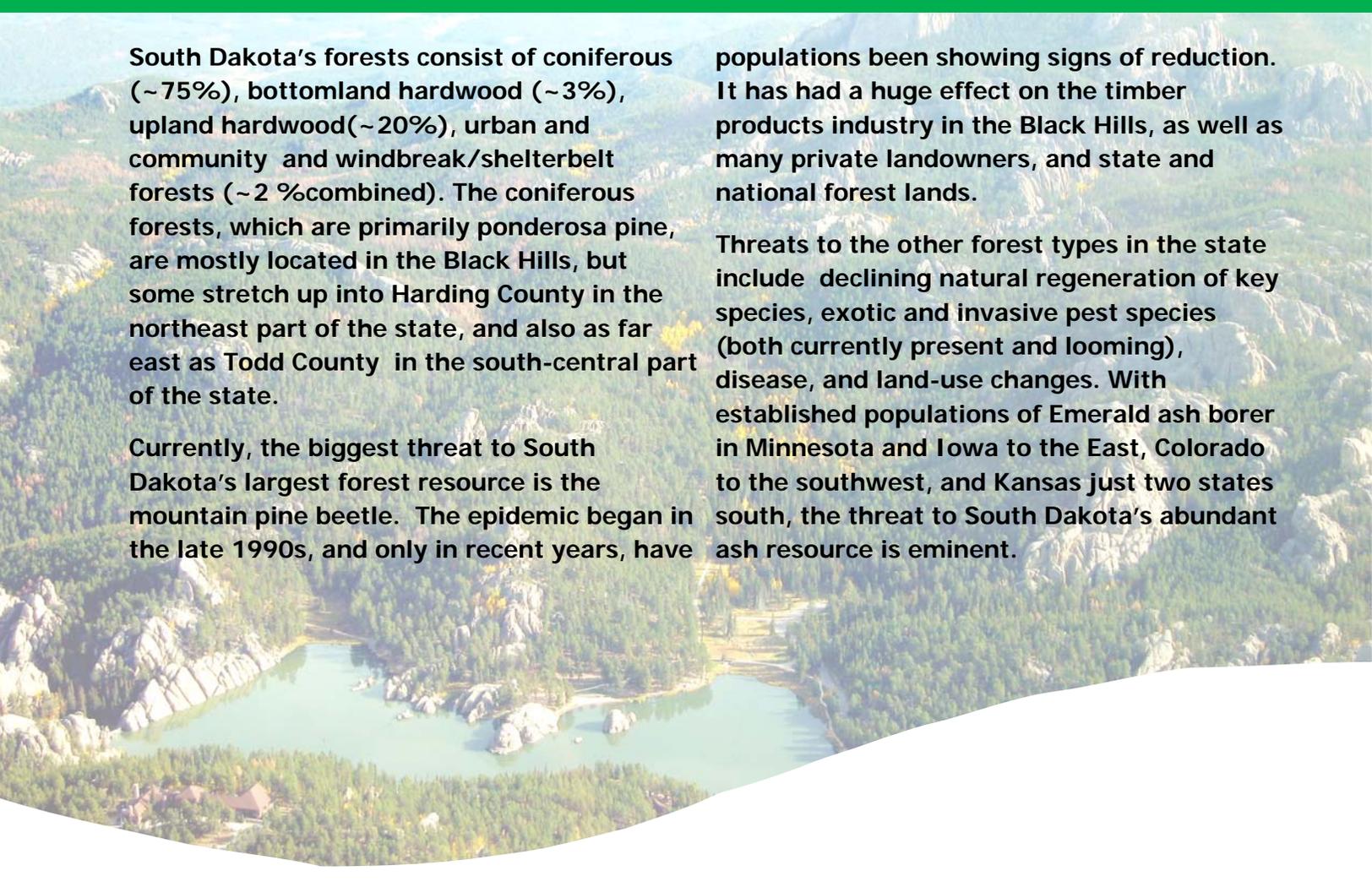
South Dakota's Forests

South Dakota's forests consist of coniferous (~75%), bottomland hardwood (~3%), upland hardwood (~20%), urban and community and windbreak/shelterbelt forests (~2 %combined). The coniferous forests, which are primarily ponderosa pine, are mostly located in the Black Hills, but some stretch up into Harding County in the northeast part of the state, and also as far east as Todd County in the south-central part of the state.

Currently, the biggest threat to South Dakota's largest forest resource is the mountain pine beetle. The epidemic began in the late 1990s, and only in recent years, have

populations been showing signs of reduction. It has had a huge effect on the timber products industry in the Black Hills, as well as many private landowners, and state and national forest lands.

Threats to the other forest types in the state include declining natural regeneration of key species, exotic and invasive pest species (both currently present and looming), disease, and land-use changes. With established populations of Emerald ash borer in Minnesota and Iowa to the East, Colorado to the southwest, and Kansas just two states south, the threat to South Dakota's abundant ash resource is eminent.



2010-2014 Trapping & Monitoring

- 71 Gypsy moth traps have been placed throughout the State annually at campgrounds, rest areas, and tourist destinations. In 2011, APHIS confirmed one Gypsy moth in a trap in South Dakota. No positive catches were reported in traps placed by the Division of Resource Conservation and Forestry (RCF) staff.
- 63 Lindgren funnel traps have been placed annually at the four large sawmills throughout the Hills to trap pine engraver beetles which can kill pine trees on surrounding properties when beetle populations are high.
- Placed and monitored pine engraver beetle traps at smaller sawmills in past years as requested.
- Respond to an average of 450 insect and disease requests per year. (Does not include mountain pine beetle program assists)
- Implement a "Don't Move Firewood" poster campaign to reduce the potential for spread of pest into and around the state.



Gypsy Moth Trap



Oystershell Scale on Aspen

2010-2014 Community Forest Health Assistance

- 16 community Dutch elm disease surveys completed.
- Pine engraver beetle traps placed throughout high visibility areas in Spearfish, Rapid City, and other recreational sites where beetle populations were killing trees or where high potential for outbreak had been created due to thinning.
- Provided training for city employees on insect and disease identification and management.
- Held an average of 8 workshops annually on proper tree care, exotic pests, first detector training, pesticide recertification, and woody plant insect and disease pests found in communities throughout South Dakota.



Dutch elm disease on an American elm in Rapid City, SD

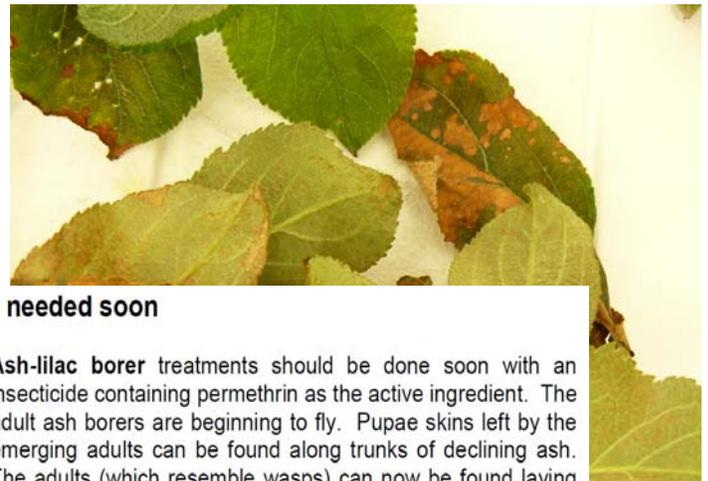


Pine engraver beetle trapping on Skyline Wilderness in Rapid City, SD

Weekly Pest Updates & Pest Bulletins

In conjunction with South Dakota State University, Dr. John Ball creates pest updates which are posted on RCF's website. These updates are posted weekly during the growing season to highlight current plant development and insect and disease problems within the state. Individuals, RCF field staff, and other agencies' employees send pictures and samples to Dr. Ball to confirm field diagnoses, which keep the updates current as to what's being seen by communities and landowners around the state. The pest updates also include pictures and samples sent in by private individuals via e-mail in a section called "E-samples." Timely topics are included to help landowners decide what management should occur at that time to mitigate the plant problems people are experiencing. Outside of the growing season, pest updates are published as needed, such as if a blizzard damages vegetation across a large area, and a high number of requests are made for information. In FY2014, the division began tracking hits on the Pest Updates specifically, and recorded nearly 8,900 hits in one year. These updates can be viewed at:

<http://sdda.sd.gov/conservation-forestry/forest-health/tree-pest-alerts/>



Pest treatments needed soon



Ash-lilac borer treatments should be done soon with an insecticide containing permethrin as the active ingredient. The adult ash borers are beginning to fly. Pupae skins left by the emerging adults can be found along trunks of declining ash. The adults (which resemble wasps) can now be found laying eggs on the lower trunks of trees. Ash trees, particularly the younger and stressed trees, need to have the trunks covered with the insecticide, usually up to a height of 10 to 15 feet. This is our native ash-lilac borer, not the emerald ash borer, an insect not yet identified in South Dakota.

Forest Health Education Workshops 2010-2014



- 3-4 workshops held every fall throughout the Black Hills encouraging forest landowners to survey their properties for MPB, and treat any infested trees by methods and dates proven to reduce beetle populations.
- 3-4 workshops held every spring throughout the Black Hills to cover the benefits and efficacy of correctly spraying ponderosa pine trees with the proper chemicals to prevent MPB attack.
- Held workshops following storms that cause heavy, widespread tree damage (ie: ice storm in Sioux Falls, Spring, 2013; Atlas Blizzard in Western SD, Fall, 2013) to educate on proper pruning, and management to prevent further damage and promote healthy trees.

Western Bark Beetle and MPB Projects 2010-2014

Governor's Black Hills Initiative:

In FY2012 Governor Daugaard appropriated \$4MM for a three year initiative designed to provide assistance to landowners in the Black Hills affected by the mountain pine beetle epidemic. RCF was tasked with administering the program. Seasonal marking crews of between 50 and 80 employees were hired through a contract with South Dakota Association of Conservation Districts. Crews were trained by Division personnel, and quality control inspections were completed throughout the process to insure marking accuracy. Once complete, landowners received letters and maps identifying the infested trees on their properties, and instructed on how to successfully reduce the infestation on their property. Cost share for approved treatments was available to qualifying landowners. After three years, the program resulted in 186,695 acres surveyed, assisting 3,848 landowners, and identifying 363,982 infested trees. Of those identified, 275,465 (76%) trees were reported as treated by the landowners.



County Mountain Pine Beetle Initiative:

The South Dakota legislature appropriated \$2MM for FY2014 through HB 1050 to be used for a county MPB suppression program. The program was administered by RCF as a 2:1 cost-share grant, and was intended to suppress the mountain pine beetle epidemic. RCF was responsible for training all county crew personnel and managing the infested tree data collected. Over the course of the program, county crews identified 105,849 green infested trees, and 15,525 dead trees to be treated. This initiative resulted in 79,896 green infested trees and 4,689 dead trees cut on national forest system lands in targeted areas approved by US Forest Service, 300 foot buffers around private, and road right-of-ways. In FY15, and additional \$60,000 was approved for Custer County work in road right-of-ways, bringing the total State contribution to this program to \$2,043,000.



MPB in Custer State Park:

Survey and marking efforts for MPB in CSP have been ongoing since 2005. Between 2010-14, approximately 181,000 green infested trees were identified, with the majority being treated through salvage and cut and chunk efforts. The number of acres surveyed differed each year, being at most 35,000, and at least 15,000. 51 limber pine have had anti-aggregate pheromones placed on them to protect them from mountain pine beetle attack. Only 48 of the original tagged 51 have been found in the past 3 years, but additional ones have been located, including several seedlings and saplings too small for pheromone pouches. Other MPB suppression activities in the park include lethal baiting, which is baiting pesticide sprayed trees, baiting and girdling trees, and other chemical pheromone studies to reduce potential for MPB infestation. The park has also been proactive in preventative spraying of legacy trees.



In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender