

# SOUTH DAKOTA FOREST ACTION PLAN ADDENDUM

## National Priorities Section and Five Year Review

November 2015

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## **National Priorities Section and**

## **Five Year Review**

*Prepared by*

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## **ACKNOWLEDGMENTS**

Collaboration with several partners was instrumental to the development of both the *South Dakota Statewide Assessment of Forest Resources* and the *South Dakota Statewide Forest Resource Strategy* documents. A list of forest management plans and contributors for this document can be found in the *South Dakota Statewide Assessment of Forest Resources*.

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Cover Photos: Diversity of forest types across South Dakota.

## EXECUTIVE SUMMARY

The South Dakota Forest Action Plan is made up of two documents completed in 2010: The South Dakota Assessment of Forest Resources, and the South Dakota Statewide Forest Resource Strategy. The forest types, their condition, and a compilation of threats and strategies is presented in the South Dakota *Statewide Assessment of Forest Resources*<sup>1</sup>. The South Dakota Statewide Forest Resource Strategy details threats, strategies, existing resources, needs, partners, monitoring, and interstate collaboration. This report serves as the National Priorities Section and a five year review of actions taken to implement the Forest Action Plan across South Dakota and the National Priorities section.

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<sup>1</sup> Hocking, C. M., E. L. Krantz, and G. J. Josten, 2010. South Dakota *Statewide Assessment of Forest Resources*, prepared by RESPEC, Rapid City, SD, and South Dakota Department of Agriculture, Rapid City, SD, for South Dakota Department of Agriculture, Pierre, SD.

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## **Introduction:**

The South Dakota Forest Resource Strategy was created in June 2010 to provide a long-term, comprehensive, coordinated strategy for investing state, federal, and partner resources. The purpose of this strategy is to provide a comprehensive management plan for priority areas identified in the assessment. The resource strategy details threats, strategies, existing resources, needs, and partners. The threats and strategies described here were assembled with input from the South Dakota Forest Stewardship Coordinating Committee (FSCC), the South Dakota Community Forestry Advisory Council (SDCFAC), resource professionals and forest landowners. The input from the FSCC and the SDCFAC came from numerous meetings with the two groups, and during a work session when they were all present. Input from resource professionals and forest landowners was obtained through the questionnaire that is described in the South Dakota Statewide Assessment of Forest Resources (SAFR) (Hocking et al, 2010).

The United States Forest Service requires the State Forester conduct a review of the existing South Dakota Forest Resource Strategy five years after completion. In addition the State Forester must develop a National Priorities Section describing actions and success stories contributing to each of the National Priorities.

On June 18, 2015, RCF met with the Forest Stewardship Coordinating Committee and other partners to discuss the Forest Action Plan Review and national Priorities Section. There were no specific issues and concerns with the current Forest Action Plan goals and objectives voiced at this meeting. RCF discussed the planning process and deadlines and the partners expressed agreement with the plan presented. The 10 year up- date was also addressed but in a general context. RCF will initiate a partners meeting for that endeavor at a later date.

South Dakota has completed a review of its Forest Resource Strategy. This document serves as the National Priorities section and the five year review of the plan.

# 1.0 Implementation Highlights:

## 1.1 Forest Health Program

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 primarily located in the Black Hills, but also extend into Harding County in the northeast part of the state, and east into 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 in recent years, has been showing signs of slowing. It has had a huge effect on the forest products industry in the Black Hills, as well as 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 the detection of the emerald ash borer in Minnesota, Iowa, Colorado, and Kansas, the threat to South Dakota's ash is eminent.

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 of wildfire, weeds and invasive species, water quality degradation, 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.
- Suppress wildfire and reduce wildland fuel hazard threats.

### 1.1.1 *Trapping and monitoring*

From 2010 to 2014 our trapping and monitoring efforts included seventy-one gypsy moth traps placed throughout the State annually at campgrounds, rest areas, and tourist destinations. Although APHIS has confirmed positive catches of Gypsy moth in South Dakota nearly every year, no positive catches were reported in traps placed by the Division

of Resource Conservation and Forestry (RCF) staff over the past five years. Sixty-three Lindgren funnel traps have been placed annually at the four large sawmills throughout the Black Hills to trap pine engraver beetle which can kill pine trees on surrounding properties when beetle populations are high. RCF had placed and monitored pine engraver beetle traps at smaller sawmills in past years as requested. RCF responded to an average of 450 insect and disease requests per year. (This does not include mountain pine beetle program assists.) RCF implemented a “Don’t Move Firewood” poster campaign to reduce the potential for spread of pests into and around the state.

#### ***1.1.2 Community forestry health assistance***

RCF completed 16 community Dutch elm disease surveys. Four hundred fifty trees were identified as infected, were marked for removal, and were subsequently removed. Pine engraver beetle traps were placed throughout high visibility areas in Spearfish, Rapid City, and other recreational sites where beetle populations were killing trees or where high potential for outbreaks had been created due to thinning. Pheromone attractants were used in the traps to attract and kill the pine engraver beetles in an effort to reduce mortality of nearby healthy pine trees.

RCF provided training for city employees on tree insect and disease identification and management with an average of approximately ten employees per training. RCF held an average of eight 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.

#### ***1.1.3 Weekly pest updates and pest bulletins***

In conjunction with South Dakota State University (SDSU), Dr. John Ball creates pest updates for trees, shrubs, and landscape ornamentals 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. Landowners, 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; if weather events damage vegetation across a large area, care, maintenance, and removal methods may be discussed. A bulletin may be generated if a high number of requests are made for information of a specific problem. In FY2014, RCF 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/>

#### **1.1.4      *Forest health education workshops***

Three to four workshops were held every fall throughout the Black Hills encouraging forest landowners to survey their properties for mountain pine beetle (MPB), and treat any infested trees by methods and dates proven to reduce beetle populations. Three to four workshops were 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.

RCF held workshops following weather events that caused heavy, widespread tree damage (i.e.: ice storm in Sioux Falls, Spring, 2013; Atlas Blizzard in Western SD, Fall, 2013) to educate landowners on proper pruning and management to prevent further damage and promote healthy trees.

#### **1.1.5      *Mountain Pine Beetle initiatives***

One of the priority areas in the South Dakota Forest Action Plan is the South Dakota Black Hills. A serious threat to the ponderosa pine in the Black Hills is mountain pine beetle (MPB). Since 1997, MPB has affected 422,000 acres (40%) of pine in the Black Hills of South Dakota (BHSD) threatening loss of the multiple benefits forest provides.

A partnership was formed in the Black Hills to battle the mountain pine beetle (MPB) epidemic. The Black Hills National Forest, Bureau of Land Management, Wyoming State Forestry, and Neiman Timber Company acquire and analyze aerial imagery. The Mountain Pine Beetle Working Group (a partnership of industry, federal, state, & county agencies in the South Dakota & Wyoming Black Hills, & forest landowners) identifies the treatment priority areas each year based on aerial imagery and field observations. The South Dakota Association of Conservation Districts (SDACD) was contracted by RCF to provide the labor to mark the trees to be treated in addition to its own personnel and personnel from partners.

- In 2012 South Dakota Governor Dennis Daugaard implemented the Black Hills Initiative to provide assistance to private landowners affected by the MPB epidemic. RCF administered the program for a 3-year period, FY2012 to 2014. 186,695 acres were surveyed and 363,982 infested trees were marked. Nine hundred sixty landowners participated in the cost share program from 2012 to 2014. 189,175 infested trees were treated with cost share assistance and eight hundred fifty one landowners treated 86,290 infested trees without cost share assistance.
- In 2013, the South Dakota legislature appropriated two million dollars for FY2014 to be used for a county MPB suppression program for four South Dakota counties in the BHSD. From 2013 to 2015 the four counties marked 105, 849 green MPB infested trees and 15,525 standing dead MPB infested trees. During the same timeframe the counties treated 79, 893 green MPB infested trees and 4,683 standing dead trees.
- In 2014, the South Dakota legislature appropriated \$1.9 million dollars for an *all lands* approach to suppress the MPB epidemic. These funds were used in

conjunction with a \$300,000 competitive grant from the US Forest Service State and Private Forestry program. RCF contracted with the SDACD to locate and mark infested trees on federal lands adjacent to state and private lands. In total, 671 private properties on 21,677 acres were marked for 40,148 infested trees. 12,619 acres of Black Hills National Forest lands were surveyed for MPB marking 65,218 infested trees.

Cost share was available to private landowners to help them treat their infested trees. RCF provided up to 75 percent cost share. 33,757 (84%) of the infested trees on private lands were treated. 29,002 trees on private lands were treated with cost share funds. 4,755 trees were treated without cost share.

- Our efforts to mitigate the effects of Mountain Pine Beetle (MPB) in Custer State Park (CSP), including survey and marking for MPB, have been ongoing since 2005. Between 2010 and 2014, 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, ranging from 15,000 to 35,000 acres.

Fifty-one limber pines found in the Cathedral Spires area of Custer State Park have been treated with anti-aggregate pheromones to protect them from mountain pine beetle attack. Only forty-eight of the original tagged fifty-one have been found in the past 3 years, but additional trees have been located, including several seedlings and saplings too small for pheromone pouches. The limber pines we treated are part of a rare, native, and endemic population known to remain in the Black Hills of South Dakota. They are of special importance to Custer State Park.

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.

Our records indicate the majority of properties that participated in the survey and marking program for more than one year available saw decreasing numbers of infested trees in subsequent years.

### ***1.1.6 Forest health and fuels reduction initiative***

In May 2009, RCF was awarded \$300,000 dollars for the Black Hills Landscape-Level Forest Health and Fuels Reduction Initiative through the US Forest Service Redesign Competitive Grant process. The state matched those funds using nonfederal dollars. Custer, Fall River, Lawrence, Meade and Pennington counties were identified as areas where grant funds could be used over the course of three years.

The Black Hills National Forest is interspersed with private forest lands that are being fragmented by subdivisions. This effort concentrated on thinning forest stands, reducing fuel loading, and conducting prescribed burns where they could be conducted safely. The project was to treat 4,300 acres identified as high priority projects through existing Community Wildfire Protection Plans (CWPP) and addressed serious forest health and fire hazard areas on state and private lands within the Black Hills.

Thinning, prescribed burning, and pile burning reduces fire and fuel risk, improves forest health, and decreases the risk of forests to attack by insect and disease. Private lands and Custer State Park have a backlog of fuel issues including:

- Limited prescribed burning combined with fire suppression;
- Overly dense stands of ponderosa pine;
- Thousands of large and small brush piles that are not burned.

The project allowed a greater ability to accomplish these objectives in a timely manner

As of January 31, 2014, all deliverables under this grant were completed. The accomplishments were:

- 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.

Meeting prescribed burning conditions and securing required personnel to accomplish the burns were the biggest challenges in accomplishing the targets. An escape during an attempt to burn one block of prescribed area shut down further burning efforts for the season. Non-commercial thinning was achieved through the use of contractors.

## 1.2 Forest Stewardship Program

Established through the 1990 Farm Bill, the Forest Stewardship Program (FSP) encourages private forest landowners to manage their lands using professionally prepared forest stewardship plans. In addition to forest stewardship plan preparation, FSP is the primary source of funding for forest management technical assistance provided by RCF.

The Forest Stewardship Program supports the South Dakota Forest Action Plan by utilizing 37 strategies to address all three national themes (Conserve Rural Forests; Protect Forests from Harm; Enhance Public Benefits from Trees and Forests) outlined by the State & Private Forestry (S&PF) National Priorities and Objectives. The program utilizes strategies to address all 14 threats identified in the Forest Action Plan. Examples of the strategies outlined in this document include, but are not limited to:

- Maintain forest land in agricultural classification
- Provide forest management technical assistance
- Educate landowners
- Prepare and implement Forest Stewardship Plans
- Promote use of woody biomass
- Work with other agencies to discourage fragmentation
- Provide financial incentives to implement management
- Promote species diversity
- Riparian forest management and enhancement
- Develop and monitor BMP's
- Coordinate with NRCS
- Promote windbreak renovation

#### ***1.2.1 Landowner assistance***

From 2010 to 2015 RCF rural foresters provided 1,400 private landowners with technical assistance with forest stewardship plans, timber management information, and general forestry help. The foresters provided 3,501 landowners with prairie forestry assistance. In the five year period of 2010 to 2014, RCF foresters wrote or updated 71 forest stewardship plans covering 25,763 acres. The total privately held acreage in the BHSD covered by a forest stewardship plan is 138,007 acres.

#### ***1.2.2 Non-commercial thinning assistance***

RCF rural foresters provided technical assistance for two programs that help private forest landowners thin their non-commercial forest lands. The USDA Natural Resources Conservation Service's (NRCS) Environmental Quality Incentives Program (EQIP) and the SD Conservation Commission's Coordinated Natural Resources Conservation Fund Grant Program provided funds to private forest landowners for timber stand improvement projects. The NRCS provided funds to RCF that are matched by state funds to administer the EQIP forestry practices. Technical assistance for the Conservation Commission thinning grants and projects that receive no cost share is funded by the FSP and state matching funds.

Accomplishments for 2010 through 2014 include: 75 EQIP Practices (Thinning, Brush Management, Meadow Enhancement) covering 2,036 acres; assistance to 78 landowners on Conservation Commission Grant forestry projects covering 552 acres; 46 projects completed without cost share covering 885 acres; and 3,091 total completed acres.

#### ***1.2.3 Agroforestry assistance***

Assistance and planning by RCF rural foresters resulted in the planting of 28,668 new trees and shrubs covering 76.6 acres of land. Foresters reviewed 382 Conservation Commission tree planting plans for approval from 2010-2014. Tree plantings support the State Forest

Action Plan strategies of expanding species diversity and providing a younger age class of trees to offset over mature and dying trees that are rendering windbreaks ineffective.

#### **1.2.4 Tree Farm program**

The American Tree Farm System promotes good forest management through the certification of sustainably managed woodland Tree Farms, and recognition of well-managed windbreaks. The Tree Farm Program complements the Forest Stewardship Program by encouraging private forest landowners to manage their forest lands. RCF supports the Tree Farm Program in South Dakota by supporting the South Dakota Tree Farm Committee (TFC), helping administer the program, helping teach and certify inspecting foresters, and by certifying and inspecting Tree Farms. All RCF rural foresters are certified to inspect and certify Tree Farms.

Over the 5 year period 2010 to 2014, the total number of Tree Farms has declined from 197 to 185; however, the number of acres these Tree Farms cover has increased from 29,167 acres to 30,140 acres.

The TFC established a program to help landowners hire consultant foresters to prepare forest stewardship plans for their property and become certified Tree Farms. Funds were provided by Neiman Timber Co. RCF provided \$13,000 in Forest Stewardship Program funds to this program. The program has helped 15 landowners obtain Forest Stewardship Plans for their properties encompassing 2,580 acres of certified Tree Farms.

#### **1.2.5 Windbreak condition grant**

According to the 1992 US Geological Survey, *America's Northern Plains, Overview and Assessment of Natural Resources*, there are about 12 million acres of cropland in South Dakota and about 4 million acres are considered highly erodible for conservation compliance. Research supports that windbreaks can have a significant impact in reducing wind erosion, increasing crop yields, conserving energy, and increasing economic benefits of livestock operations. However, in the 2008 Great Plains Initiative (GPI) inventory of windbreak condition, the age of windbreaks indicate that the percentage of trees in poor condition is expected to grow rapidly over the next ten to twenty years. RCF predicts that windbreaks in South Dakota will experience significant declines in health and function even though the inventory shows that 22% of the trees are in good condition. The majority of the trees, 71%, are in fair condition and 7% of the trees are in poor condition.

The Windbreak Condition Project is a result of a 2014 \$150,000 US Forest Service (USFS) Competitive Grant award to assess the condition of windbreaks in high priority areas in eight counties in South Dakota. The project will utilize Geographic Information System (GIS) and remote sensing techniques and field survey methods to identify windbreak locations and assess the primary function and condition of the windbreaks in eight different counties in South Dakota. Sites that are small blocks of trees within maintained lawns, naturally

forested riparian areas, ditch/road banks and fence lines will be excluded from this project.

#### **1.2.6      NRCS cooperative work**

Cooperative Conservation Partnership Initiative (CCPI) included two proposals authored by RCF to renovate shelterbelts and plant forested riparian buffers in South Dakota, North Dakota, Kansas, and Nebraska. Both lead to five year projects. RCF was the lead agency for these two projects. In FY2014, the four states received 231 applications for shelterbelt renovation. One hundred forty-nine applications were funded amounting to \$1,335,274. Eleven applications for riparian tree planting were received from Kansas and South Dakota during the FY2014 sign-up. Of those applications, six applications were funded in the amount of \$53,169.

RCF entered into the current contribution agreement with the NRCS in 2013 to provide services for landowners interested in using EQIP for management on their property. RCF contributes 50% of the cost of technical assistance. The services provided were needs assessment, design, practice layout, development of practice plan, and certification of completion. The practices to be implemented included forest stand improvement, firebreak, forest slash treatment, and brush management.

RCF entered into a contribution agreement with the NRCS in 2013 to provide agroforestry services that include training of forestry and windbreak practices, technical assistance, and document reviews. RCF contributes 25% of the costs for these services.

### **1.3    Urban and Community Forest Program**

Since 1972 RCF has offered community forestry technical assistance to individuals, service organizations, non-profit groups, and communities. RCF's community forestry team offers technical assistance for establishment of tree boards, development of tree ordinances, organization of community tree inventories, identification and control of insect and disease problems, and assistance with grant preparation and administration. Educational programs on tree selection, planting, health, and maintenance are available for communities, schools, and other organizations. RCF focuses its efforts on assisting communities with the development of local community forestry programs.

By 2014, 81% of the population in South Dakota was living in communities with managed urban forestry programs. Four hundred eighty-eight thousand people lived in communities that were receiving forestry technical assistance from the community's staff forester, a contractor, or a RCF forester. There are 600,000 people living in South Dakota communities that have the potential to develop an urban forest management program. In 2014, over 16,000 volunteer hours were logged as part of community forestry programs.

Federal Urban and Community Forestry (UCF) program revenue to South Dakota decreased from \$230,000 in 2010 to \$222,000 in 2014, a decline of 11.11%. The federal spending per capita in communities where RCF foresters provided assistance decreased from \$0.53 to \$0.46; a decline of 13.21%.

South Dakota has 116 local tree boards that provide the foundation for most of the community forestry programs in South Dakota. These boards consist of community leaders, city employees, and volunteer citizens. Tree boards are vital to the development of tree ordinances, preparation of annual work plans, tree plantings, tree maintenance, and tree removals. The boards provide their citizens with information, secure and administer grant funds, and conduct local Arbor Day activities.

RCF awarded UCF Comprehensive Challenge Grants to 43 communities and organizations for projects totaling \$70,263 between 2010 and 2014. Twenty seven of the projects involved planting new trees, six projects were for tree care, six projects involved tree removal or replacement, and twelve projects were for education and training.

Over the last five years, RCF foresters provided an average of 268 assists to community governments, volunteer/service groups, and private citizens in over 82 different communities per year resulting in a total of 1,336 technical assists. An average of 74 presentations on urban forestry and Arbor Day, and Smokey Bear appearances were conducted annually since 2010.

The UCF Program supports the South Dakota Forest Action Plan and the following S&PF National Priorities and Objectives:

- 1.2 Actively and sustainably manage forests
- 2.2 Identify, manage, and reduce threats to forest and ecosystem health
- 3.1 Protect and enhance water quality and quantity
- 3.2 Improve air quality and conserve energy
- 3.3 Assist communities in planning for and reducing forest health risks
- 3.4 Maintain and enhance the economic benefits and values of trees and forests
- 3.6 Connect people to trees and forests, and engage them in environmental stewardship activities
- 3.7 Manage trees and forests to mitigate and adapt to global climate change

#### ***1.3.1 Tree City USA program***

Tree City USA is a community improvement and national recognition program for towns and cities which, in the process of effectively managing their public tree resources, meet the program's established standards. The program is sponsored by the National Arbor Day Foundation at the national level, and by RCF at the state level. In 2014, South Dakota had 32 Tree City USA communities.

To qualify for Tree City USA designation, a community must meet four standards:

1. A community tree board or other organized committee must be in place and meet regularly to oversee the urban & community forestry program;
2. An effective community tree ordinance must be developed, passed, and enforced;
3. A community forestry program funded by a minimum of \$2.00 per capita must be in place; and
4. An organized Arbor Day celebration must be held and an official Arbor Day proclamation made by the mayor or other community leaders.

### ***1.3.2 Community Threat Assessment Protocol project***

RCF cooperated with Kansas, Nebraska, and North Dakota to conduct forest resource surveys and assess potential impacts of threats to communities under the Community Threat Assessment Protocol (CTAP). RCF secured a contractor to collect data in 2012-13. Tree data was collected in 41 South Dakota communities by the end of the project in the summer of 2013. A total of 35,931 trees were assessed statewide. Eighty-two percent of the trees were assessed to be in excellent to good condition; eighteen percent of the trees were in fair to poor condition.

The emerald ash borer (EAB) is an exotic invasive insect pest that has caused extensive ash mortality in 25 US states and two Canadian provinces since its detection in 2002. All ash species native to North America are susceptible to attack and the majority of trees die within seven years of initial attack. Once killed by EAB, ash trees quickly dry out and become hazards. EAB has not yet been detected in South Dakota but has been found across Iowa and the Twin Cities area. Because of the high proportion of ash in South Dakota community forests, additional analysis was done on the ash species that were inventoried during CTAP. Eleven thousand two-hundred thirty-six trees (30%) of the total trees inventoried were native ash. The total removal costs (over 7 years) would be \$9.7 million dollars in 41 communities. The estimated replacement cost for these trees would be \$18.6 million dollars.

### ***1.3.3 Urban forest inventory and assessment project***

In 2013, the Montana – South Dakota Urban Forest Inventory and Assessment (MT-SD UFIA) project was initiated to provide communities not inventoried by CTAP with an inventory and analysis of urban forest resources and management recommendations. This project was the result of a USFS competitive grant award. Many of the community forests are aging and over-mature. This project targets efforts to threats and priority areas identified in the state's forest action plan.

MT-SD UFIA collected public tree inventories on 20,569 trees in 28 South Dakota communities during the summer of 2014. These inventories were analyzed using i-Tree. For each tree, five attributes were recorded: location, diameter, height, species, and condition. Mirroring the CTAP project, additional analyses were conducted on the ash populations. On average, 33% of public trees in the inventoried communities were ash, with some as high as

51% ash. Once completed, the analyses were provided to the communities and the results were explained. Further, RCF foresters provide reports to the communities in order to point out features that help to explicate their message.

Thirty three percent of trees inventoried (6,779 trees) were native ash. Removal and replacement cost of ash in MT-SD UFIA surveyed communities was determined to be \$5.92-11.36 million. There are approximately 4.72 million urban trees in South Dakota; this means there may be as many as 1.58 million ash trees, with a replacement cost of over \$10 billion.

#### **1.3.4      *State fairgrounds tree inventory***

In the summer of 2010, RCF conducted an assessment and inventory of the trees at the South Dakota State Fairgrounds. After two days of measurements, the staff collected data for the grounds on the diversity and health of the urban forest. Overall, 93% of the trees were in excellent or good condition. The species composition was 39.3% ash, 7.3% cottonwood, 7% hackberry, 4.5% honey locust, 4.1% spruce, and 37.7% other species. This inventory will serve as the baseline GIS inventory for the fairgrounds.

#### **1.3.5      *Forestry work with underserved communities***

In 2010, RCF assisted the Yankton Sioux Tribe in planting nine living snow fences in various areas around tribal lands. The RCF forester wrote the management plans and contract for the project, as well as helped the tribal personnel select trees for the snow fences. The plans were approved by the Yankton Sioux Tribe and the South Dakota Department of Transportation in 2010. The Charles Mix Conservation District planted the trees. The living snow fences are now healthy stands of young trees improving the community and helping to shield it from the effects of the cold winter storms.

At the request of the Tribe, a RCF forester made recommendations on improving and maintaining walnut trees that the tribe has planted as a possible source of income. RCF shared expertise on the proper methods for pruning and tree maintenance for tree health and nut production.

In the spring of 2014, the Shannon County School District sought to create an outdoor classroom at Batesland School on the Pine Ridge Reservation for the students to learn about nature and its benefits as well as beautify parts of the campus. RCF helped to make this a reality through the Urban and Community Forestry Comprehensive Challenge Grant. After much consultation and planning, the school district planted 28 trees including hackberry, bur oak, accolade elm, green ash, and cedar amongst the campus grounds. They also planted various fruit trees for a student orchard. The students will use this new outdoor environment to learn about stewardship, responsibility, the effects we have on the environment, and the benefits of trees and forests to the community. Many of the topics and curriculum will be done through Project Learning Tree, an environmental education program designed for students ages pre-K through 12th grade.

### **1.3.6      *Environmental education through Project Learning Tree***

Project Learning Tree (PLT) advances environmental literacy and promotes stewardship through excellence in environmental education, professional development, and curriculum resources that use trees and forests as windows on the world. PLT seeks to develop students' awareness, appreciation, skills, and commitment to address environmental issues and to provide a framework for students to apply scientific processes and higher order thinking skills to resolve environmental problems. To help students acquire an appreciation and tolerance of diverse viewpoints on environmental issues and develop attitudes and actions based on analysis and evaluation of the available information. PLT encourages creativity, originality, and flexibility to resolve environmental problems and issues. PLT wants to inspire and empower students to become responsible, productive, and participatory members of society.

In South Dakota, PLT is a 501 C Non-profit directed by a Board of Directors who represent financial and program support. SD PLT is sponsored through grants from RCF, National PLT and Bureau of Land Management. Pledge sponsorships are also received from Black Hills Forest Resources Association, Black Hills Power and Light Company, South Dakota Lumberman's Association, Tri-State Association of Building Materials Suppliers, Neiman's Timber Products and Baker Timber Products. In addition, Dakota Society of American Foresters and the South Dakota Tree Farm Committee are very supportive partners in our program.

Since the program was introduced to South Dakota in 1985, approximately 1,500 educators have received training in PLT. The South Dakota universities which presently offer PLT graduate credits are Northern State in Aberdeen, University of South Dakota (USD) in Vermillion, Black Hills State in Spearfish, and Capital University Center in Pierre (CUC).

### **1.4.    *Forest Landowner Education Program***

The majority of forest land in the United States is categorized as non-industrial private forest land; there are approximately 10 million owners of 354 million acres. In South Dakota, there are 12,000 landowners of 492,000 acres of non-industrial private forest lands.

Today's Forest is a series of educational workshops developed for non-industrial private forest landowners. Funded by a grant from the USDA Forest Service, the series was developed as a cooperative effort between RCF, South Dakota Cooperative Extension Service, Wyoming State Forestry, and Nebraska Forest Service.

Today's Forest Program supported the South Dakota Forest Action Plan by utilizing educational strategies addressing threats to fragmentation, forest health, wildfire, weeds and invasive species, water quantity and quality, climate change, underutilization of woody biomass, and loss or degradation of wildlife habitat. These strategies support the themes 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:

- Educate private forest landowners, the public, school children, conservation districts, and business/community leaders about the importance of forests, forest management, planning, programs, availability of assistance, and how to implement recommendations.
- Promote utilization of woody biomass for a broad spectrum of products to maintain and expand a viable and diverse forest products industry.
- Increase public awareness of the need of fire prevention and fuels mitigation.
- Educate forest landowners and forest workers about Best Management Practices for protecting water quality during forestry operations.
- Promote and support practices that improve resilience of forested landscapes and restore impacted landscapes to maintain ecological functions and critical ecosystem services.

Between 2010 and 2014, seven workshops (indoor and field) were delivered to audiences in South Dakota, Wyoming and Nebraska. Two public service announcements were produced and aired on local television stations in the Black Hills area to advertise landowner workshops. All seven of the multi-state workshops are posted on the internet and can be viewed at the SDSU Extension's *iGrow Today's Forest* website <http://igrow.org/gardens/trees-and-forests/> under landowner education. Twelve workshops specific to managing and preventing MPB infestations were delivered to landowners in South Dakota. There are 22 video vignettes addressing specific topics discussed in the workshops. Preliminary and final landowner surveys were conducted to gauge interest in participation and follow up for effectiveness of the program.

*A New Look at an Old Fuel Source: Home Heating Fuel, Wood Pellets or Firewood* brochure was published and made available on the internet.

## **1.5 Wildland Fire**

The South Dakota Department of Agriculture, Division of Wildland Fire (SDWF) takes a leadership role in providing direction and organization to coordinate cooperative forest fire suppression efforts between individual landowners, local fire districts, counties, tribal, and federal governments on state and private forestlands as authorized in state law.

SDWF promotes the use of prescribed burning with the realization that rural areas can be better protected, and that catastrophic wildfire can be minimized through preventative measures in cooperation and coordination with stakeholders in protecting lives, property, and resources. Prescribed burning objectives include reducing hazardous fuels thus reducing the impact of wildland fire threats to forest and ecosystem health, enhancing water quality and quantity, and enhancing wildlife habitat.

Survivable Space Projects- Hazardous fuels mitigation projects are continually being developed on private land (hand thinning with piling and burning, chipping, or removal) through a 50% cost-share program.

Community Planning & Project Grants- SDWF is persistent when working with subdivisions and identified “Communities at Risk” to identify hazardous fuels mitigation needs and projects, implement public education programs, and perform risk assessments in accordance with National Fire Protection Association code 1144. Identification of prospective project areas is increasingly becoming more of an interagency venture involving SDWF staff, Black Hills National Forest districts, county emergency managers, county fire coordinators, and local fire departments.

SDWF has two hand crews that fight fire in South Dakota and throughout the United States. They are actively engaged in fuels mitigation programs which include cutting and piling fuels that are a threat to “Communities at Risk”. A variety of treatments are utilized to minimize the amount of hand piles built. Larger diameter material is hauled out for post and pole uses, having the larger diameter material removed increases efficiency of pile burning in the winter. When favorable conditions exist, the crews are able to burn slash piles on various fuels projects.

SDWF supports the South Dakota Forest Action Plan and the following S&PF National Priorities and Objectives:

- 2.1      Restore fire-adapted lands and reduce risk of wildfire impacts.
- 2.2      Identify, manage, and reduce threats to forest and ecosystem health
- 3.1      Protect and enhance water quality and quantity
- 3.5      Protect, conserve, and enhance wildlife and fish habitat

### ***1.5.1      Fuels Mitigation***

From 2010 – 2015, the Statewide Private Landowner/ Community Treatment and Assistance program spent \$2,316,758 on fuels reduction treatments. Thirty-three projects/landowners covering 6,170 acres were treated under the program using contractors. The 2010 - 2015 SDWF hand crews spent \$2,719,471 on fuels reduction treatments covering 4,179 acres and 210 projects/landowners were treated under the program.

For the period 2010-2015, Fuels Reduction by Financial Assistance to Landowners completed 255 projects treating 2,474 acres. \$704,231 awarded landowners with landowner match of nearly \$600,000. Three Community Wildfire Protection Plans (CWPPs) were updated.

Thirty-two communities were assisted under the Fuels Mitigation program from 2010 to 2015.

### **1.5.2      *Fire Suppression***

Two full-time Assistant Fire Management Officer/Battalion Chiefs were hired for the Lead and Custer State Park Field Offices and have provided for seven day staffing during fire season by permanent personnel. This also allows for more office coverage in the winter time for issuing burning permits and training when the Fire Management Officer/Division Chief is on assignment or training or otherwise absent. These positions were very valuable and important to the safe containment and control of the 14,000 acre Sheep Draw fire and 3,000 acre Moonshine wildfires in Harding County in spring of 2015.

From CY 2010 to YTD 2015, SDWF has directly suppressed 514 fires in the Black Hills Forest Fire Protection District and Harding County for 49,645 acres. During that same time SDWF also assisted counties and municipalities in statewide with assistance on 42 fires for a total of 21,315 acres on a request basis.

For CY 2010 to 2015 YTD time period, the SDWF provided assistance for 1,452 requests in the form of resource exchange on fires, prescribed burning support, and dispatch support to federal and state partners both in South Dakota and nationwide.

### **1.5.3      *Training***

SDWF has moved most training to the Academy Training concept for better utilization of time, place, and to offer classes in succession to meet firefighter needs. Academies are held in 3 different locations with East and West River academies hosting 100/200 level classes. The Ft. Pierre Academy is held in Ft. Pierre SD which is central to the state. The Ft. Pierre Academy offers 100 through 400 level classes. By hosting the classes in this manner, we can centralize them and make them more easily accessible to firefighters statewide.

## **1.6    *Forest Inventory Program***

The US Forest Service Forest Inventory and Analysis (FIA) program partners with state forestry agencies to collect information on the status and trends of each states' forests. South Dakota is part of the 24 state Northern Research Station FIA unit. This FIA unit is one of four FIA research station units in the United States.

RCF has been implementing the annualized inventory since 2001. RCF completed two 5 year inventory cycles. RCF is five years into the current seven year inventory cycle. RCF has inventoried over 1,375 plots since the annualized inventory began. Plots are inventoried using a three phase sample.

The Forest Inventory & Analysis (FIA) Program supports the South Dakota Forest Action Plan by providing critical data about the type, extent, and condition of the state's forests. The inventory includes all ownerships—private, local government, state, and federal—but recognizes and stratifies by ownership. FIA provides a record of the impacts of biotic and abiotic threats.

The FIA Program addresses all three national themes in the Forest Action Plan—Conserve Rural Forests, Protect Forests from Harm, Enhance Public Benefits from Trees and Forests—outlined by the State & Private Forestry (S&PF) National Priorities and Objectives. The objectives addressed include:

- 1.1 Identify and conserve high priority forest ecosystems and landscapes
- 2.2 Identify, manage, and reduce threats to forest ecosystems
- 3.3 Assist communities in planning for and reducing forest health risks

#### **1.6.1      Great Plains Inventory analysis**

Funded by a U.S. Forest Service grant and matching state funds in 2007, state forestry agencies in Kansas, Nebraska, North Dakota and South Dakota engaged in a regional initiative to prepare for the arrival of invasive pests, such as EAB, that threaten tree resources in the northern Plains. The Great Plains Tree and Forest Invasives Initiative (Great Plains Initiative) gave state forestry agencies the opportunity to work together to create public awareness, promote alternatives to ash tree plantings and prepare for the invasive species arrival by assessing the region's tree resources and determining and addressing the potential impacts of EAB to those resources. The states developed and implemented a uniform inventory process that would be applicable in areas not covered by the traditional FIA program. The Great Plains Initiative project utilizes FIA standards and techniques to cover non-forest woodlands, windbreaks, and forested areas within urban areas.

In 2014, RCF contracted with South Dakota State Forester Emeritus, Ray Sowers, to analyze the South Dakota data gathered in the Great Plains Initiative.<sup>2</sup> The Great Plains Inventory (GPI) data showed that there are 435,558 acres of windbreaks/shelterbelts in South Dakota consisting of livestock protection breaks, field windbreaks, farmstead windbreaks, rural home sites, wildlife tree plantings, living snow fences, and abandoned farmsteads. Ninety-one percent of the windbreaks are on private land and nine percent are public ownership. Forty percent of the trees were identified as ash.

There are 424,419 acres of woodlands in South Dakota consisting of natural riparian woodlands, urban-residential woodlands, isolated tree resources, and narrow wooded strips. Ninety-seven percent of the woodlands are private lands and three percent are publicly owned. Twenty two percent of the trees were ash.

### **1.7    Forest Legacy Program**

As part of the 1990 Farm Bill, Congress created the Forest Legacy Program to identify and protect environmentally important private forestlands threatened with conversion to non-forest

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<sup>2</sup> R. A. Sowers, *South Dakota Woodlands and Wetlands*, unpublished report, South Dakota Division of Resource Conservation & Forestry, 2015

uses such as subdivisions for residential or commercial development. To help maintain the integrity and traditional uses of private forest-lands, the Forest Legacy Program promotes the use of conservation easements and fee simple purchase of threatened private lands. Easements and purchases provide a new tool with which the federal government, in cooperation with state and local agencies, private organizations and individuals can preserve the rich heritage of private forests across the nation.

The Blood Run Forest Legacy Project supports the South Dakota Forest Action plan by utilizing eight strategies and address all three national themes (Conservation Rural Forest, Protect Forest from Harm, & Enhance public benefits from trees and forest) outlined by the State and Private Forestry (S&PF) National Priorities and Objectives. The strategies used addresses 10 threats identified in the forest Action Plan. Examples of the strategies are as followed:

- Create public awareness and educate the public about forest fragmentation ;
- Work with other Federal, State, and Local agencies to discourage fragmentation of Forest Lands;
- Collaborate with and engage Federal, State, and Local land managers to improve Forest Health;
- Promote natural species diversity within native forest lands;
- Encourage the planting of a diverse mix of trees species; and
- Work with The South Dakota Department of Game Fish and Parks to help implement strategies found in the Wildlife Action Plan.

#### **1.7.1        *Blood Run Project***

The Blood Run Area consisted of privately owned 236 acres of cropland, grassland, upland and riparian forests. The South Dakota Forest Action plan places a high priority on the conservation of riparian forests. Designated a National Historic landmark, the area was of historical significance for several Native American cultures. As a result of its ecological and cultural uniqueness, the Blood Run site was a prime candidate for protection.

The South Dakota Departments of Game, Fish and Parks (GFP) and RCF worked with South Dakota Parks and Wildlife Foundation, Conservation Fund, and Forest Legacy Program (FLP) to acquire the site from private ownership. The property was purchased in 2014. GFP will manage the Blood Run property as part of Good Earth State Park. RCF prepared a forest stewardship plan for the property to guide future management to protect the ecologic value of the site. The plan was designed to address concerns within the FLP acquisition and non-FLP acquired portions of Good Earth State Park. Specific to the FLP acquired portion, the plan addresses fifty-one acres of grassland, six acres of cropland, one hundred forty-six acres of forest, and thirty-three acres to be reforested.

The FLP requires the acquired site to be at least 75% forested cover. The existing Good Earth State Park project site needed an additional 33 acre of tree and shrubs to meet this threshold. RCF worked closely with GFP to develop a tree planting plan. As of 2015,

approximately 6,000 new trees and shrubs were planted. Reforestation plans call for another 20,000 trees and shrubs to be planted over the next nine years.

There are three sites under consideration for future addition to Good Earth State Park. Those include the Thornton, Spring Creek, and Allen properties. The Thornton property is a mixture of hardwoods and grass along the Big Sioux River that borders the southern boundary of Good Earth State Park. The Spring Creek property is immediately south of the Thornton property and touches Good Earth State Park with the Thornton property at the Big Sioux River. These properties are also being considered for inclusion in the FLP.

## **1.8 Natural Resource Conservation Program**

The Coordinated Natural Resources Conservation Fund was established by the State Legislature in 1992 to implement goals and objectives identified in the South Dakota Coordinated Plan for Natural Resources Conservation. The plan targets reduction of soil erosion, improvement of rangelands, and improvement of water quality and quantity, enhancement of wildlife habitat, increased public awareness of natural resources, funding, and use of renewable energy. The fund is used to direct cost share funds to South Dakota conservation districts. Grant applications are reviewed, approved, and awarded by the State Conservation Commission. RCF administers the conservation programs on behalf of the State and the Conservation Commission.

The Resource Conservation Program supports the following S&PF National Priorities and Objectives:

- 2.1. Restore fire-adapted lands and reduce risk of wildfire impacts
- 2.2. Identify, manage, and reduce threats to forest and ecosystem health
- 3.1. Protect and enhance water quality and quantity
- 3.2. Improve air quality and conserve energy
- 3.4. Maintain and enhance the economic benefits and values of trees and forests
- 3.5. Protect, conserve, and enhance wildlife and fish habitat
- 3.6. Connect people to trees and forests, and engage them in environmental stewardship activities
- 3.7. Manage trees and forests to mitigate and adapt to global climate change

One hundred forty-eight projects were funded from FY2010-2014 awarding \$4,722,419 to 47 Conservation Districts. Another \$9,954,901 of other funds were leveraged including Federal and local sources. Every \$1 of conservation funds was matched by \$2.11 of other funds. Twenty-six cropland, 56 rangeland, 15 information & education, 18 water quality and 33 technical assistance projects have been funded.

According to final reports from conservation districts and reports from federal, state, and local entities and South Dakota State University report “Impact of South Dakota Agriculture” the resources affected and the economic impact of the projects are:

- 1,250,000 acres of cropland with soil erosion improved to tolerable levels with an economic impact of a 1.6% increase in crop industry output, 707 new full and part time jobs - \$16 M wages, and \$104 M increase in state industrial output;
- 500,000 acres of rangeland in poor/fair condition improved one condition class with an economic impact of a 0.94% increase in cattle production, 104 new full and part time jobs - \$0.8 M wages, and an \$8 M increase in state industrial output; and
- Topsoil erosion cut by 16 million tons with an economic impact which is assumed significant based on future sustainable productivity of the land and future availability of clean water for consumption and recreation.

## 2.0 Implementation Challenges Discovered During the Past Five Years

1. Mountain pine beetle epidemic: Developing partnerships and responding to a Hills-wide multi-state mountain pine beetle epidemic with limited resources. Identifying new priority areas every year while establishing and maintaining a credible, effective program to mitigate the spread and impacts of the epidemic.
2. While implementing the \$12 million mountain pine beetle suppression program, continue to implement viable and effective Forest Stewardship, Urban Community Forestry, Forest Health Protection, Forest Inventory Analysis, and Conservation programs with no increase in staff.
3. Personnel: With the high turnover rate, resources need to be directed toward the recruitment and retention of qualified employees. With decreasing budgets, RCF needs to take positive steps to improve employee retention.
4. Training: Keeping personnel up to date on forest insect, disease, and technology training.
5. Response to Demands: Working with cooperators to overcome bureaucratic obstacles to responding to an expanding mountain pine beetle epidemic in a timely fashion.
6. Public Engagement: Keeping the public engaged/interested in proactive forest and urban forestry management.
7. Fragmentation: Fragmentation of forest ownerships and the difficulty of managing smaller, noncontiguous blocks.
8. Landowner Education and Involvement: Private landowner interest is a constant challenge. Urban forestry is a community effort that can only thrive with the presence of concerned and enthusiastic citizens.
9. Funding: Conservation districts do not have taxing authority nor do many receive a significant amount of their funding from other government entities. As a result, conservation district must generate their funding through venture operations.
10. Recruitment: Recruitment of new conservation district supervisors and employees bring energy and new ways of addressing natural resource issues.
11. Strategic Thinking: Getting conservation districts to think strategically about identifying and addressing natural resource concerns on the watershed or larger scale.
12. Vision: Helping conservation district understand their purpose and how to use this vision to guide their activities.
13. Identity: Helping conservation district think beyond just providing services (tree and grass planting) that generate funds for district operations.

## 3.0 Implementation Focus During the Next Five Years

1. Forest Health: Keep decision makers abreast of all forest health threats in and around South Dakota.
2. Landscape scale management: Current partnerships and new tools facilitate cooperation will help coordinate and implement landscape scale management.
3. Active forest management: Promote active forest management through wider outreach.
4. Windbreak renovation: The current windbreak condition project will aide in showing the need and directing efforts to the 8-county region in SE South Dakota. The project will need to be expanded to other areas of the state.
5. Tree Farm certifications: The new direction of Tree Farm for South Dakota is certification. This will increase the number of Forest Stewardship Plans that will need to be brought up to Tree Farm standards for certification in a short time frame.
6. Response: Respond rapidly to widespread damage to South Dakota's forest resources following natural disasters (fire & weather events) and insect outbreaks (native & invasive).
7. Partnerships: Work with other agencies, industry, and private landowners to promote and enhance forest management on a landscape scale through collaborative projects. The current partnerships have opened regular conversation in addressing issues and management. Continuing these partnerships will lend itself to opportunities to work collaboratively on future issues.
8. Outreach: Promote forest management through RCF's website & public workshops held throughout the state. Workshops and seminars should teach communities and landowners about proper forest management and highlighting the benefits of management practices. Workshops specifically focused on urban issues, such as pruning techniques for healthy and safe trees in yards, how to get the most benefits out of urban trees, or where to plant to save energy will benefit the urban forest. Use the RCF website and social media to keep information easily accessible. Promote forest management, protecting water quality, windbreak installation and renovation through workshops, division website, and social media.
9. Training: Provide personnel forest insect and disease training, at least bi-annually, or as needed when new forest health concerns arise.
10. Conservation District Education: Inform and "re-educate" conservation district regarding the Coordinated Plan for Natural Resources Conservation and how to use this plan to help identify and address larger scale natural resources needs.
11. Tools for Districts: Provide district employees and supervisors with training to understand:
  - Applicable state laws pertaining to natural resources (soil erosion and sediment reduction laws);
  - Payroll and taxes;
  - The accounting manual; and
  - The roles and responsibility of conservation districts.
12. Assistance: Assist the State Conservation Commission identify:

- The needs of conservation districts;
- New practices needed to address natural resource issues; and
- Training to new Conservation Commissioners regarding conservation districts and natural resource issues within South Dakota.

## 4.0 Data Needs or New Issues Revealed Since 2010

1. Cohesive Strategies: Movement towards cohesive strategies to accomplish landscape scale projects across all ownerships to promote fuel-reduction and forest health.
2. Climate Change: Data on changes in climate, increasing the potential for natural disasters (i.e. flood, blizzards, tornadoes, drought, hail, ice storms) that can cause tremendous damage to South Dakota's forest resources.
3. Forest Inventories: Continued geospatial data collection on the status of the resource to show the effect of the mountain pine beetle epidemic, identify future program needs, and prepare for imminent pest and disease threats such as emerald ash borer.
4. Identify Underserved Populations: Identify underserved populations and how to target that population.
5. Natural Resource Trends: Acquire current Natural Resource Inventory data.
6. Watershed Level Planning: Formulate natural resource strategies that are on a watershed scale.
7. Identify Target Audience: Acquire knowledge of target audiences and communities to better serve each one.
8. Partnerships: Identify new and strengthen partnerships between programs and RCF. Continuing these partnerships and conversations will open opportunities to work together to address issues on a landscape scale.
9. Technology: Increased adoption of technology
10. Outreach: Increased use of online databases and social media sites in order to drive engagement and enthusiasm for forestry and natural resources education.
11. Accomplishment Reporting: Movement from online database accomplishment reporting to geospatial, real-time reporting.
12. Education: The need to educate public about maintaining healthy forests after the MPB epidemic ends.

## **5.0 USFS State & Private Forestry National Priorities and Objectives\***

### **1. Conserve Working Forest Landscapes**

- 1.1. Identify and conserve high priority forest ecosystems and landscapes
- 1.2. Actively and sustainably manage forests

### **2. Protect Forests from Harm**

- 2.1. Restore fire-adapted lands and reduce risk of wildfire impacts
- 2.2. Identify, manage, and reduce threats to forest and ecosystem health

### **3. Enhance Public Benefits from Trees and Forests**

- 3.1. Protect and enhance water quality and quantity
- 3.2. Improve air quality and conserve energy
- 3.3. Assist communities in planning for and reducing forest health risks
- 3.4. Maintain and enhance the economic benefits and values of trees and forests
- 3.5. Protect, conserve, and enhance wildlife and fish habitat
- 3.6. Connect people to trees and forests, and engage them in environmental stewardship activities
- 3.7. Manage trees and forests to mitigate and adapt to global climate change

\* Approved by the S&PF Redesign Implementation Council and by NASF, Sept. 2008

# USFS STATE & PRIVATE FORESTRY NATIONAL PRIORITIES & OBJECTIVES CROSSWALK WITH SOUTH DAKOTA PROGRAMS & PROJECTS

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South Dakota Programs/Projects	Conserve Working Forest Landscapes	Protect Forests from Harm	Enhance Public Benefits from Trees & Forests										
			Objectives (Refer to list on page 30)										
			1.1	1.2	2.1	2.2	3.1	3.2	3.3	3.4	3.5	3.6	3.7
1.1 Forest Health Program													
1.1.1 Trapping & Monitoring		X			X				X				
1.1.2 Community forest health assistance					X	X	X	X	X	X	X		
1.1.3 Weekly pest updates & pest bulletins					X				X			X	
1.1.4 Forest health education		X			X	X	X	X	X	X	X		
1.1.5 Mountain Pine Beetle initiatives	X	X	X		X	X		X	X		X		
1.1.6 Forest health & fuels reduction initiative		X	X		X	X	X		X				
1.2 Forest Stewardship Program													
1.2.1 Landowner assistance	X	X	X		X	X	X		X	X	X		
1.2.2 Non-commercial thinning assistance		X	X		X	X	X		X	X	X		
1.2.3 Agroforestry assistance		X	X		X	X	X		X	X	X		
1.2.4 Tree Farm program	X	X	X		X	X	X		X	X	X		
1.2.5 Windbreak condition grant		X			X	X	X		X	X	X		
1.2.6 NRCS cooperative work		X	X		X	X	X		X	X	X		

<b>South Dakota Programs/Projects</b>	<b>Conserve Working Forest Landscapes</b>	<b>Protect Forests from Harm</b>	<b>Enhance Public Benefits from Trees &amp; Forests</b>							
	1.1	1.2	2.1	2.2	3.1	3.2	3.3	3.4	3.5	3.6
Objectives (Refer to list on page 30)										
1.3 Urban & Community Forestry										
1.3.1 Tree City USA program						X	X	X		X
1.3.2 Community threat assessment protocol project		X		X	X	X	X	X		X
1.3 Urban & Community Forestry (cntd)										
1.3.3 Urban forest inventory & assessment project		X		X	X	X	X	X		X
1.3.4 State fairgrounds tree inventory		X		X	X	X	X	X		X
1.3.6 Project learning Tree		X		X				X	X	X
1.4 Forest Landowner Education Program		X		X				X	X	X
1.5 Wildland Fire										
1.5.1 Fuels mitigation			X	X			X	X		
1.5.2 Fire suppression			X	X			X	X		
1.5.3 Training			X				X			X
1.6 Forest Inventory Program										
1.6.1 Great Plains Inventory	X			X			X	X		
1.7 Forest Legacy Program										
1.7.1 Blood Run project	X	X		X	X			X	X	X
1.8 Resource Conservation		X			X	X		X	X	X