DIVISION OF RESOURCE CONSERVATION & FORESTRY: FISCAL YEAR 2011 ANNUAL REPORT

Photo of Capitol Building in Pierre, SD

Resource Conservation and Forestry

Table of Contents

CREDITS

Raymond A. Sowers
State Forester/Division Director,
Resource Conservation & Forestry
523 E. Capitol Ave
Pierre, SD 57501

Writer/Editor

Tiffany Arp
Community Forestry Coordinator

Contributors

Coe Foss, Greg Josten, Bill Smith, Brian Scott, Brian Garbisch, Dianne Miller, Cec Johnson, Doug Haugan, Jodi Bechard, and John Hinners.

Photographs

Division personnel, US Forest Service, the South Dakota Association of Conservation Districts, and www.disasterrecovery.sd.org.

New Personnel

Tiffany Arp

I was born and raised in Traverse City, MI. I attended Northwestern Michigan College for two years studying Criminal Justice and Law Enforcement. I then spent a semester studying abroad in Ballyvaughan, Co. Clare, Ireland at the Burren College of Arts with a focus on Irish History, Mythology, and local horticulture before transferring to Michigan Technological University in Houghton, MI to study Forestry. I have a Bachelors of Science degree in Forestry with a minor in Ecology. I moved to Rapid City, SD in January 2008 to work as the Community Forester for the South Dakota Department of Agriculture. In December of 2009, I moved to Pelican Rapids, MN to work as the Utility Arborist for Lake Region Electrical Cooperative to build and run their Vegetation Management Program. I returned to South Dakota Department of Agriculture to fill the position of Community Forestry Coordinator in August of 2010 out of the Pierre, SD office. In my spare time I enjoy being outdoors, reading, and camping. I am also an avid lover of animals and spend time each week volunteering for the Paws Animal Rescue here in Pierre.

Jodi Bechard

I was born in Vermillion, SD and raised in Fort Pierre, SD. I attended the University of South Dakota for one year studying Dental Hygiene before transferring to Mitchell Technical Institute where I received my Associates degree in Business Management. My previous jobs include working for South Dakota Retirement and the South Dakota Department of Education. I joined the Department of Agriculture in November of 2010. I'm married to my husband, John Bechard, and we are expecting our first child in November. My hobbies include hunting, fishing, and home remodel.

Welcome Jodi and Tiffany!

Division of Resource Conservation and Forestry

SOUTH DAKOTA DEPARTMENT OF AGRICULTURE

The mission of the Division of Resource Conservation and Forestry is to conserve, protect, improve, and develop the natural resources of South Dakota for its citizens.

Our forestry programs are designed to provide direct technical assistance and advice to private landowners concerning their forests and other trees. We work with farmers, ranchers, rural homeowners, and urban dwellers to select the best location and tree/shrub species to plant on their property, resolve problems with trees, and to provide a better, and safe, habitat for all citizens.

The mission of the state resource conservation program is to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this state.

The division continues to operate on a program level along four core programs: Community Forestry, Natural Resource Conservation (soil, water, air, etc.), Forest Health, and Service Forestry. Each program has a team leader and a program administrator that reports to the State Forester/Division Director Raymond A. Sowers (Pierre Office).

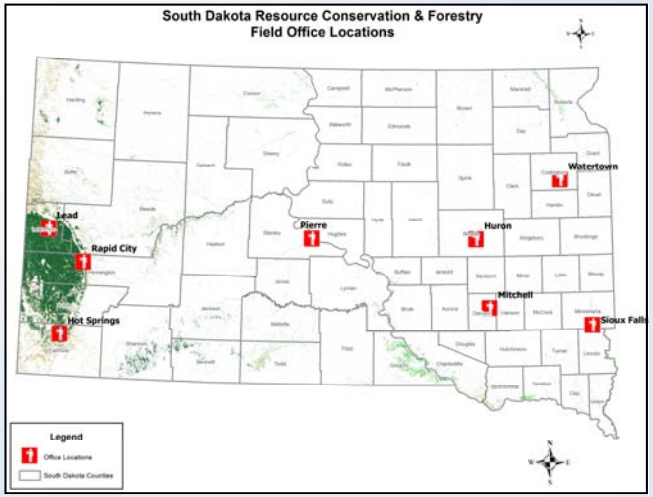
The administrators and team leaders are:

- Community Forestry - Tiffany Arp, team leader (Pierre office); Bill Smith, program administrator (Pierre office)
- Conservation - Bill Smith, team leader and program administrator (Pierre office)
- Forest Health - Coe Foss, team leader and program administrator (Rapid City office)
- Service Forestry - Greg Josten, team leader and program administrator (Rapid City office)

Each of the four teams has one to four field staff to handle technical assists. Our offices are located in Hot Springs, Huron, Lead, Mitchell, Pierre, Rapid City, Sioux Falls, and Watertown. Contact information for our field offices can be found on the division's website.

This report highlights our accomplishments and special projects in fiscal year 2011 by each program. For additional copies of this report contact the division office in Pierre at 605.773.3623, toll free for in-state callers 1.800.228.5254, or by emailing the division at: SDRCF@state.sd.us.

Division of Resource Conservation and Forestry Field Office locations.



South Dakota Forest Action Plan

The 2008 Farm Bill required each state to prepare a Statewide Assessment of Forest Resources and Forest Resource Strategy, or **Forest Action Plan**, to qualify for funding through the US Department of Agriculture Forest Service State and Private Forestry grants. South Dakota's Forest Action Plan summarizes the state's forests by the extent and condition, values, threats, ownership needs, problems, and opportunities by major forest type. The purpose of this Forest Action plan is to:

- Analyze present conditions, trends, and threats on all ownerships using publicly available information;
- Identify forest-related threats, benefits, and services consistent with the State and Private Forest Redesign national themes;
- Delineate priority rural and urban forest landscape areas to be addressed by the Forest Action Plan (see page 3);
- Identify multistate areas that could receive designation as regional priorities; and
- Provide a comprehensive management plan for priority areas detailing the threats, strategies, existing resources, needs, and partners.

This plan provides a long-term, comprehensive, coordinated strategy for investing state, federal, and partner resources. The plan details threats, strategies, existing resources, needs, and partners.

The Forest Action Plan stratified the state's forestlands into five cover types: coniferous, upland hardwood, bottomland, windbreaks, and community forests. The Division of Resource Conservation and Forestry uses this plan to identify threats and target responses to address management needs of forests.

Identified Threats

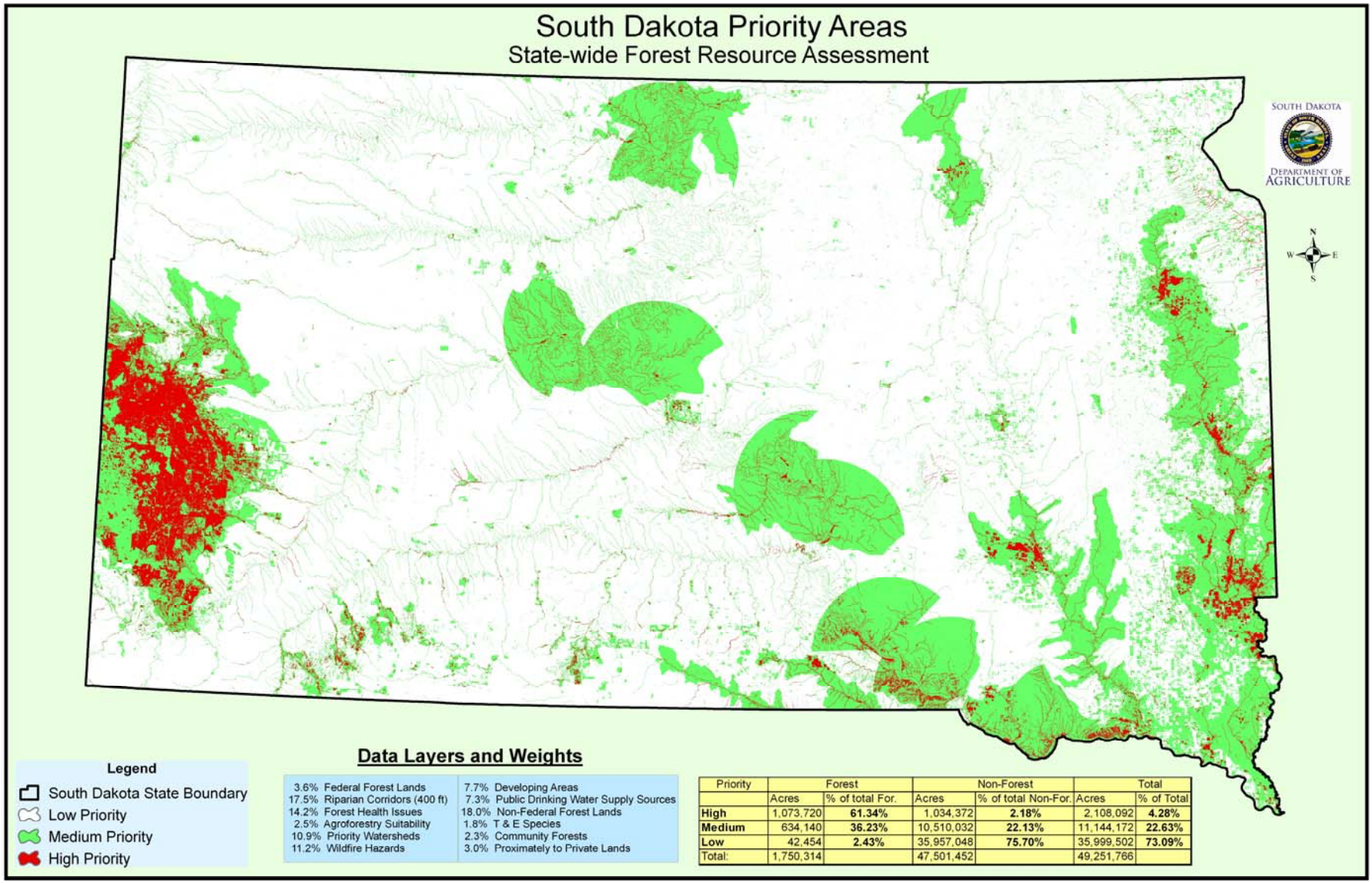
Statewide threats by forest community type listed in no particular order (Gray blocks indicate applicability of a threat to a forest type).

Threat	National Themes*	Forest Type				
		Conifer	Upland	Bottomland	Windbreak	Community
1. Fragmentation	CRF,PFH	■	■	■		
2. Forest Health	PFH	■	■	■	■	■
3. Wildfire	PFH	■				■
4. Weeds & Invasive Species	PFH,EPB	■	■	■	■	■
5. Water Quantity & Quality	EPB	■	■	■	■	■
6.Climate Change	PFH,EPB	■	■	■	■	■
7. Lack of Species Diversity	PFH,EPB	■		■	■	■
8. Over Mature & Dying Trees	PFH,EPB			■	■	■
9. Poor Survival & Maintenance of Planted Trees	PFH,EPB				■	■
10. Loss of Urban Trees to Development	PFH,EPB					■
11. Livestock Grazing	PFH,EPB		■	■	■	
12. Inadequate Forest Inventory Information	CRF,PFH,EPB		■	■	■	■
13. Underutilization of Woody Biomass	CRF,PFH,EPB	■	■	■	■	■
14. Loss or Degradation of Wildlife Habitat	CRF,EPB	■	■	■	■	

** National Themes: Conserve Rural Forests (CFR), Protect Forests from Harm (PFH), and Enhance Public Benefits from Trees and Forests (EPB).*

The South Dakota Forest Action Plan can be found on the below division's website.

Priority Areas



Priority	Forest		Non-Forest		Total	
	Acres	% of total For.	Acres	% of total Non-For.	Acres	% of Total
High	1,073,720	**61.34%**	1,034,372	**2.18%**	2,108,092	**4.28%**
Medium	634,140	**36.23%**	10,510,032	**22.13%**	11,144,172	**22.63%**
Low	42,454	**2.43%**	35,957,048	**75.70%**	35,999,502	**73.09%**
Total:	1,750,314		47,501,452		49,251,766	

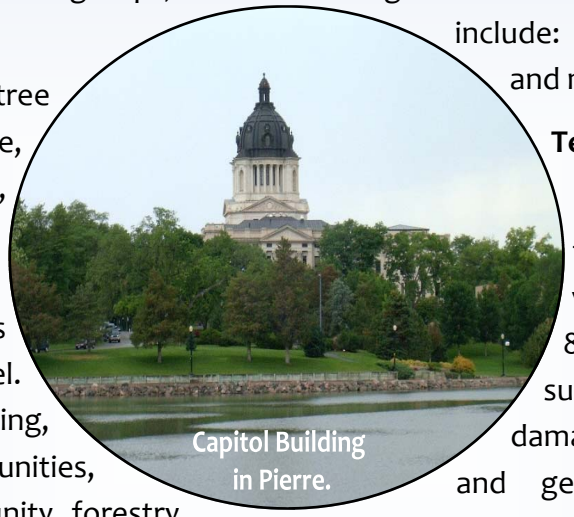
Priority Areas identified in the South Dakota Forest Action Plan.

Community Forestry

Community Forestry in South Dakota

Seventy-one percent of South Dakotans live within 'urban' areas. To serve the urban or 'community' forestry needs of these citizens, the division has offered community forestry technical assistance to individuals, service organizations, non-profit groups, and communities since 1972.

Technical assistance for establishment of a tree board, development of a tree ordinance, organization of community tree inventories, identification and control of insect and disease problems, and assistance with grant preparation and administration are just a few of the services offered by community forestry division personnel. Educational programs on tree selection, planting, health, and maintenance are available for communities, schools, and other organizations. The community forestry team focuses its efforts on assisting communities with the development of local community forestry programs.



Capitol Building in Pierre.

At the present time there are 95 known tree boards across the state. Local tree boards 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. These tree boards provide their citizens with information, secure and administer grant funds, and conduct local Arbor Day activities.

The community forestry program targets efforts at threats and priority areas identified in the state's Forest Action Plan (see page 2). Strategies used to address threats identified in the state's plan include: technical assistance, educational presentations and materials, and financial assistance.

Technical Assistance

During fiscal year 2011, the division provided 314 technical assists to community governments, volunteer-service groups, and private citizens in 82 communities. These assists covered topics such as big tree measurement (see page 8), damage evaluations, tree care recommendations, and general urban forestry projects and grant applications.

Community Forestry Presentations

The Community Forestry Team made 101 presentations to school classes and civic groups about Arbor Day, Tree City USA, Smokey Bear and fire prevention, and other community forestry subjects. Twelve workshops on tree planting, tree care, and forest health were presented. The division produced eight TV, radio, and newspaper spots about Arbor Day, tree planting and care, and general community forestry issues.

Community Forestry

Community Forestry Challenge Grant

Since 1991, the division has provided financial assistance to South Dakota communities and service organizations each year through a portion of the division's annual allocation of Urban and Community Forestry Assistance funds from the US Forest Service. These funds are awarded to communities and organizations in the form of Challenge grants. These grants are used to fund projects which solve a specific community forestry problem and demonstrate the importance of trees in communities. The community or service organization must match the challenge grants on a 1-to-1 basis.

The criteria for the challenge grant require increased commitment and effort from a community. This is in place to build long-term capacity within applying communities. The criteria are listed from highest to lowest priority with their top allocation dollar amount:

1. Professional Services—$5,000
2. Tree Inventory/Assessment—$5,000
3. Existing Tree Care and Maintenance—$1,000
4. Education/Training—$5,000
5. New Tree Planting—$1,000
6. Other Activities—$5,000

Grantee	Grant Awarded	Local Match	Total Project Cost	Project Description
Aberdeen, City of	$ 4,000.00	$ 4,000.00	$ 8,000.00	Training and implement TreeWorks software
Clear Lake, City of	$ 1,000.00	$ 1,000.00	$ 2,000.00	Plant replacement trees
Deuel Area Development	$ 1,000.00	$ 1,000.00	$ 2,000.00	Purchase and plant new trees
Elkton, City of	$ 1,000.00	$ 1,000.00	$ 2,000.00	Parks tree planting
Freeman, City of	$ 1,000.00	$ 1,000.00	$ 2,000.00	School tree planting
Sioux Falls, City of	$ 1,200.00	$ 1,200.00	$ 2,400.00	Training workshop for employees and interested public
South Dakota State Parks	$ 2,500.00	$ 2,500.00	$ 5,000.00	Educational video on Mower Blight
Volga, City of	$ 1,000.00	$ 1,388.00	$ 2,388.00	Purchase and plant new trees
Wakonda, Town of	$ 1,000.00	$ 1,000.00	$ 2,000.00	Remove and prune existing trees, and purchase and plant new trees
Webster Jolly Workers 4-H Club	$ 1,000.00	$ 1,000.00	$ 2,000.00	Plant replacement trees
Webster, City of	$ 1,000.00	$ 1,000.00	$ 2,000.00	Purchase boulevard trees
Whitewood, City of	$ 4,195.85	$ 4,195.85	$ 8,391.70	Inventory, maintenance and pruning, educational training, new trees
TOTAL	$19,895.85	$20,283.85	$40,179.70	———

Community Forestry

Grants have a maximum limit of $5,000 per year; an applicant may receive a maximum of $1,000 per year for new tree plantings and a maximum of $1,000 per year for existing tree care and maintenance. The required match may be met through volunteer labor, donated and/or purchased supplies, or actual cash expenditures.

The grants are awarded quarterly and are reviewed by the South Dakota Community Forestry Advisory Council.

South Dakota Community Forestry Advisory Council

The South Dakota Community Forestry Advisory Council is made up of representatives from city governments, the US Forest Service, green industry, non-profit groups, and volunteer organizations. They advise the State Forester on community forestry issues, recommend grant awards, help set program goals and objectives, and help develop South Dakota's community forestry five year strategic plan.

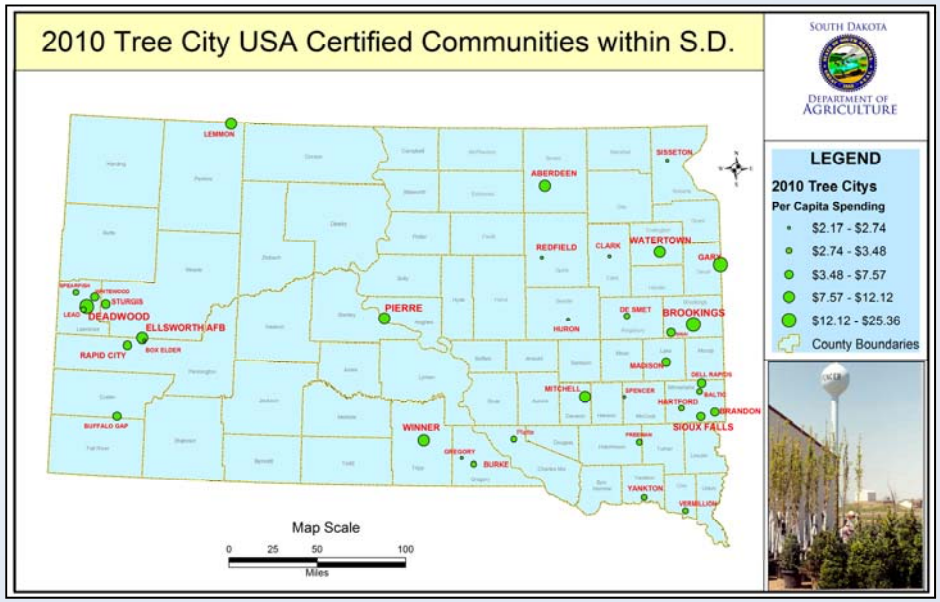
Tree City USA

Tree City USA is a community improvement and national recognition program for cities and towns that meet established standards and effectively manage their public tree resources. The program is sponsored by the Arbor Day Foundation and the US Forest Service at the national level, and by the South Dakota Division of Resource Conservation and Forestry at the state level. To qualify for Tree City USA designation, a community must meet four standards:

1. Organize a community tree board to oversee the community forestry program;
2. Establish and enforce an effective community tree ordinance;
3. Implement a community forestry program funded by a minimum of $2.00 per capita; and
4. Celebrate Arbor Day with an official proclamation and organized observance.

Division foresters recertified 34 Tree City USA communities and welcomed Box Elder and Platte as Tree City USA communities in 2011.

2010 South Dakota Tree City USA Statistical Data	
Number of Tree City, USA Communities:	36
Recertification rate:	106%
Number of Growth Award recipients:	1
Percent of population living in a Tree City, USA:	53.3%
Largest Tree City, USA community (153,888):	Sioux Falls
Smallest Tree City, USA community (120):	Sinai
$ spent by communities on community forestry management:	$3 Million+
Average per capita spent on community forestry programs:	$7.75



Community Forestry

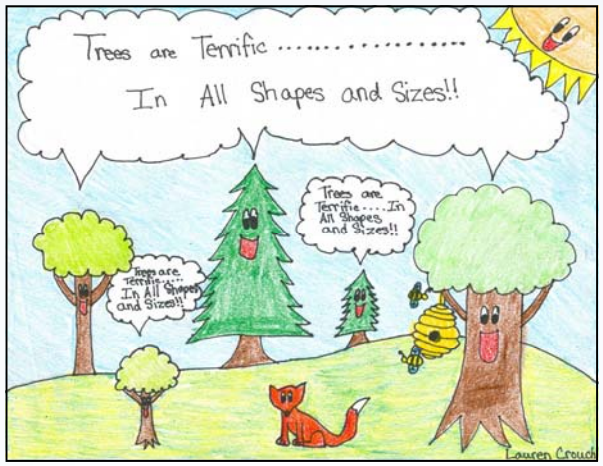
Arbor Day in South Dakota

In 1947, the State Legislature designated the last Friday in April as South Dakota's official Arbor Day. The law was repealed in 1995 as part of an omnibus elimination of laws that restrict or pertain to education, but was reestablished by the 1998 Legislature. Arbor Day is designed to specifically recognize trees for the many environmental functions and values they provide. On or around Arbor Day, division foresters provided presentations to school classes, service clubs, and other groups on the importance of planting and properly caring for our rural and urban trees, and of celebrating Arbor Day.

Arbor Day Poster Contest

The South Dakota Arbor Day Poster Contest is designed to build awareness and appreciation for trees and Arbor Day in fifth grade students across the state. Studies show that young children benefit educationally, behaviorally, and developmentally from connecting with trees and nature. The poster contest activities are intended to :

1. Increase student's knowledge about the importance of diversity in forest ecosystems;
2. Provide fun activities to get students excited about learning;
3. Provide teachers with a creative way to introduce new concepts; and
4. Incorporate principles of science, geography, language arts, civics, and the arts.



2011 South Dakota Arbor Day Poster Contest winner, Lauren Crouch's artwork.

The theme of the 2011 contest was "Trees Are Terrific … In All Shapes and Sizes!" The first place winner, Lauren Crouch who attends St. Michael/St. Katharine Drexel Elementary school in Sioux Falls, received a $200 savings bond, a certificate of achievement, and her artwork featured on the South Dakota Arbor Day Poster Contest promotional flyer. Lauren's teacher, Angela Kamps, received $100 for the purchase of educational supplies.

The second and third place winners were Dillon Swanson of O.M. Tiffany Elementary in Aberdeen and Abby Arhart of Stanley Co. Elementary in Fort Pierre, respectively. Dillon received a $150 savings bond and a certificate. Abby received a certificate of achievement and a $100 savings bond.

Additionally, the top 12 artists receive a certificate of accomplishment and their posters are featured in the annual South Dakota Arbor Day Poster Contest Calendar.

Arbor Day Poster Contest Calendar

The 2011 Arbor Day Poster Contest Calendar is a collection of artwork of the top 12 winners from around the state. The calendar is a way to recognize the winners as well as promote and celebrate Arbor Day and the many benefits trees provide.

South Dakota Register of Big Trees

In 1980, the South Dakota Register of Big Trees was initiated in the state. This is a list of the largest reported specimens of both native and naturalized tree species found within the state. The primary purpose of the register is to recognize big trees as a valuable natural resource worthy of conservation. Once identified and located, big trees may provide sources for superior seed collection and/or vegetative propagation. Through this program, uncommonly large trees of any species, especially those with historical significance, are located and recorded. The owners and/or locators (nominators) of such trees are recognized through local and statewide news releases and special certificates.

The register recognizes champions in 54 different species. A total of 234 trees, both champions and challengers, are currently listed on the register. South Dakota has two National Champions:

Black Hills spruce (*Picea glauca var. densata*)

South Dakota's largest Black Hills spruce tree is located in the Black Hills National Forest. It is 9 feet 9 inches in circumference, 103 feet tall, and 30 feet in crown spread.

Russian olive (*Elaeagnus angustifolia*)

South Dakota's largest Russian olive tree is located near Rapid City in Pennington County. It is 13 feet in circumference, 47 feet tall, and 61 feet in crown spread.

National Champions!

Project Learning Tree

South Dakota Project Learning Tree Inc. (SD PLT) is the cornerstone of the environmental education in our state and is recognized as a premier environmental education program. SD PLT provides formal and non-formal educators with the tools they need to bring the environment into their lessons with students. The activities and materials provide the youth with an understanding of *how to think, not what to think,* about our environment and natural resources. PLT provides opportunities to investigate environmental issues and encourages them to make informed, responsible decisions. Our complex environment can be better understood with critical thinking skills, service-learning, and inquiry-based activities found in Environmental Experiences for Early Childhood guide, PLT Basic Guide (Pre-K through 8th grade) and the five secondary educational modules. South Dakota PLT has been active in advisory committees, editing materials, and test piloting the PLT guides. All of the guides are written by educators and professional resource managers and meet national and state academic standards.

The audience for fiscal year 2011 included 1,037 students, 448 educators, and 6,200 members of the general public.

Audience members reached on an indirect basis totaled 6,180 students—the number of educators who received the training times 20 students for one year. The number of educators reached indirectly totaled 927—number of educators trained talked with 3 others for one year. An additional 1,000 members of the general public were also reached through word of mouth.

The following workshops/training sessions were completed during fiscal year 2011:

- Rapid City Children Center
- Forest to Product Workshop—Northern Black Hills
- Digital Dakota Network
- Black Hills State University Pre-Service students and Outdoor Education Majors
- Ellsworth Air Force Base Children's Center
- Rosebud Head Start
- Sioux Falls Eugene Field Elementary
- Custer YMCA
- Newell, Brookings, Spearfish, and Rapid City Early Childhood programs

Other activities:

- Rapid City Youth and Family Services Kids Fair
- Walk in the Forests
- Science Day and Nature Day
- South Dakota School Administrators Conference
- South Dakota Lumberman's Conference
- Ag Fest
- Tree Farm, FireWise, and Dakotas Society of American Foresters events
- Secured hosting the International Project Learning Tree Conference: May of 2012 in South Dakota!

Resource Conservation

The purpose of the state resource conservation program is to provide for the conservation of soil and water resources within the state; to prevent or control soil erosion; to prevent or minimize flood damage, and to conserve, develop, utilize, and preserve the natural resources of this state (South Dakota Codified Law § 38-7-1). In addition, the division provides administrative and technical assistance to the State Conservation Commission and conservation districts. The primary programs include:

- Revolving Loan Fund;
- Coordinated Natural Resources Conservation Grant Program;
- Conservation District Programs; and
- Technical Assistance.

South Dakota Coordinated Natural Resources Conservation Plan

The South Dakota Department of Agriculture, Division of Resource Conservation and Forestry, State Conservation Commission, conservation districts, and their federal, state, tribal, and local partners developed the state natural resources conservation plan. Goals of this plan include:

1. All Missouri River watersheds in South Dakota will achieve their environmental, social, and economic values;
2. All South Dakota waters will provide sufficient quantities of quality water to meet their beneficial uses;
3. All lands in South Dakota will have quality soils appropriate for their capability;
4. All of South Dakota will meet air quality standards;
5. Enhance recreation opportunities and wildlife habitats;

South Dakota Conservation Districts & Area Boundaries.

6. Every South Dakota citizen will have an awareness and understanding of the benefits of natural resource management; and
7. Secure stable funding and financial opportunities for natural resource management.

Revolving Loan Fund Program

Loans can be made to conservation districts or watershed districts for securing, by purchase or otherwise, necessary equipment, trees and other plant materials, and supplies needed to further their programs. Loans are made at three percent interest per annum. Loans made in fiscal year 2011 were:

Conservation District	Loan Amount	Project Description
Minnehaha	$ 14,000.00	Utility Vehicle
Perkins	$ 18,307.00	No-till Drill
Deuel	$ 13,000.00	Recondition Drill and Fabric
Jackson	$ 3,400.00	Fabric
TOTAL	$ 48,707.00	————————

Resource Conservation

Conservation District Assistance

In fiscal year 2011, program staff made 630 grant and loan program assists, 534 non-grant related assists, 161 planning assists, and conducted 11 training sessions for 43 district employees and other conservation related individuals.

Conservation Grants

During fiscal year 2011, 28 grant applications were received and 24 projects were funded.

Conservation Commission

Support to the State Conservation Commission in 2011 consisted of working with partners to find new permanent funding source(s) for the conservation grant program; refining the grant application review approval process developed in fiscal year 2009; revising the grant cost-share docket; and updating the commission's annual priorities and work plan. The commission met with multiple conservation agencies and groups to identify priorities and shared visions for conservation in South Dakota.

Funding

Prior to the 2011 Legislative Session, the conservation grant program was funded by a portion of the reimbursable, but unclaimed, gasoline taxes collected for

Conservation District	Amount Awarded	Local Match	Total Project Cost	Project Description
Beadle	$ 52,000.00	$ 150,000.00	$ 202,000.00	North Missouri Coteau Grassland Program
Brookings	$ 27,400.00	$ 12,200.00	$ 39,600.00	Resource Technician
Brookings	$ 61,880.00	$ 134,540.00	$ 196,420.00	Tree Restoration & Planting
Brule-Buffalo	$ 23,270.00	$ 35,120.00	$ 58,390.00	Grazing With Wildlife Resources
Butte	$ 46,780.00	$ 34,760.00	$ 81,540.00	Belle Fourche
Corson	$ 17,500.00	$ 17,500.00	$ 35,000.00	Resource Conservation Technician
Day	$ 28,253.00	$ 330,329.00	$ 358,582.00	Northeast Glacial Lakes
Elk Creek	$ 70,500.00	$ 160,500.00	$ 231,000.00	Elk Creek Livestock Dam
Hamlin	$ 53,000.00	$ 256,000.00	$ 203,000.00	Prairie Coteau Grassland Management
Hamlin	$ 6,176.00	$ 8,394.00	$ 14,570.00	Providing Conservation Awareness
Jackson	$ 63,500.00	$ 142,000.00	$ 205,500.00	Jackson County Ponds
Lawrence	$ 52,000.00	$ 57,000.00	$ 109,000.00	Thinning for Forest Health
Marshall	$ 32,000.00	$ 70,000.00	$ 102,000.00	Northeast South Dakota Wetlands Project
Mellette	$ 15,183.00	$ 21,946.00	$ 37,129.00	Pre-approved Practices
Mellette	$ 21,000.00	$ 28,000.00	$ 49,000.00	Todd/Mellette Wind & Erosion
Mellette	$ 78,700.00	$ 27,000.00	$ 105,700.00	Todd/Mellette Technician
Miner	$ 9,150.00	$ 9,150.00	$ 18,300.00	Shelterbelt Grant for Miner
Miner	$ 3,745.00	$ 12,531.00	$ 16,276.00	Replacement cedar for 2010
Miner	$ 24,903.00	$ 26,618.00	$ 51,521.00	Public Outreach & Conservation
Miner	$ 19,000.00	$ 19,000.00	$ 38,000.00	Resource Technician
Minnehaha	$ 40,020.00	$ 36,060.00	$ 76,080.00	Vegetative Treatment System Monitoring
Moody	$ 30,062.00	$ 11,342.00	$ 41,404.00	Resource Technician
Perkins	$ 76,426.00	$ 95,372.00	$ 174,798.00	Natural Resource Specialist
Yankton	$ 13,420.00	$ 26,390.00	$ 39,810.00	Yankton Conservation Project
TOTAL	$865,868.00	$1,721,752.00	$2,484,620.00	————————

Resource Conservation

non-highway (off-road) uses. As the agricultural community changes from gasoline to diesel powered equipment, gasoline use is diminishing. Consequently the funds available to the conservation grant program was declining.

House Bill 1215, passed during the 2011 State Legislative Session, repealed the refund provisions of the motor fuel tax, and declared that $500,000 would be deposited annually into the conservation grant program.

General Accomplishments

Conservation program staff provided seven print and radio news releases, participated in the National Association of Conservation Districts Farm Bill Task Force, participated as a "cooperating agency" for the Bureau of Land Management resource management plan revision, published newsletters to conservation districts, and conducted the state conservation speech contest.

Multi-District Projects

Twelve projects involving 66 partnerships between conservation districts were funded in 2011. These projects included sharing technicians, grassland and wetland improvement, cottonwood reestablishment, and shelterbelt establishment.

Soil Conservation Award Program

The Soil Conservation Award Program was created by the 2008 State Legislature to recognize exceptional farming and ranching practices that conserve soil and other natural resources in South Dakota. Producers utilizing grassed waterways, terraces, crop rotations, sufficient crop residue to protect soil stability, no-till, grasslands managed for sustainable productivity, livestock management to limit soil and nutrient runoff, or forest lands managed according to a forest stewardship plan are eligible for the award. In fiscal year 2011, seven producers nominated by seven conservation districts received the award.

Soil Conservation Award recipients Jim and Sandy Peters of Britton, SD were nominated by the Marshall County Conservation District.

District Supervisor Accreditation Program

Program staff completed the first set of training modules for an online Conservation District Supervisor Accreditation Program. Beginning in fiscal year 2010, staff has been working cooperatively with South Dakota Association of Conservation Districts to develop the online training program to make Conservation District

Resource Conservation

Supervisors aware of the history of the conservation movement, the roles and responsibilities of district supervisors, and legal issues important to conservation districts. South Dakota State University provides the computer network for the online training program. The remainder of the modules were completed in fiscal year 2011. The National Association of Conservation Districts recognized South Dakota's program at their annual convention in January 2011.

2011 State Speech Contest

The 50th annual State Finals of the Resource Conservation Speech Contest was held Saturday, April 2, 2011 at the state capitol in Pierre. The theme of this year's contest was "Conserving Nature as I Walk in South Dakota." Eleven high school students from across South Dakota competed at the state level. Winning first place and a $1,100 scholarship was Hannah Brenden sponsored by the South Brown Conservation District. Brenden was a junior at Aberdeen Central High School and is the daughter of Tom and Dianne Brenden of Aberdeen, SD. Receiving second place and a $750 scholarship was Tessa Stout, a sophomore at Kadoka Area High School. She is the daughter of Thad and Penny Stout of Kadoka, SD and was sponsored by the Jackson County Conservation District. Receiving third place and a $450 scholarship was Grace Chang sponsored by the Minnehaha Conservation District. She was a senior at Lincoln High School and is the daughter of KC and Irene Chang of Sioux Falls, SD. Scholarships totaling $2,300 for the winners were provided by Touchstone Energy Cooperatives of South Dakota. The contest is cosponsored by the South Dakota Department of Agriculture, the U.S. Fish & Wildlife Service, and the South Dakota Association of Conservation Districts.

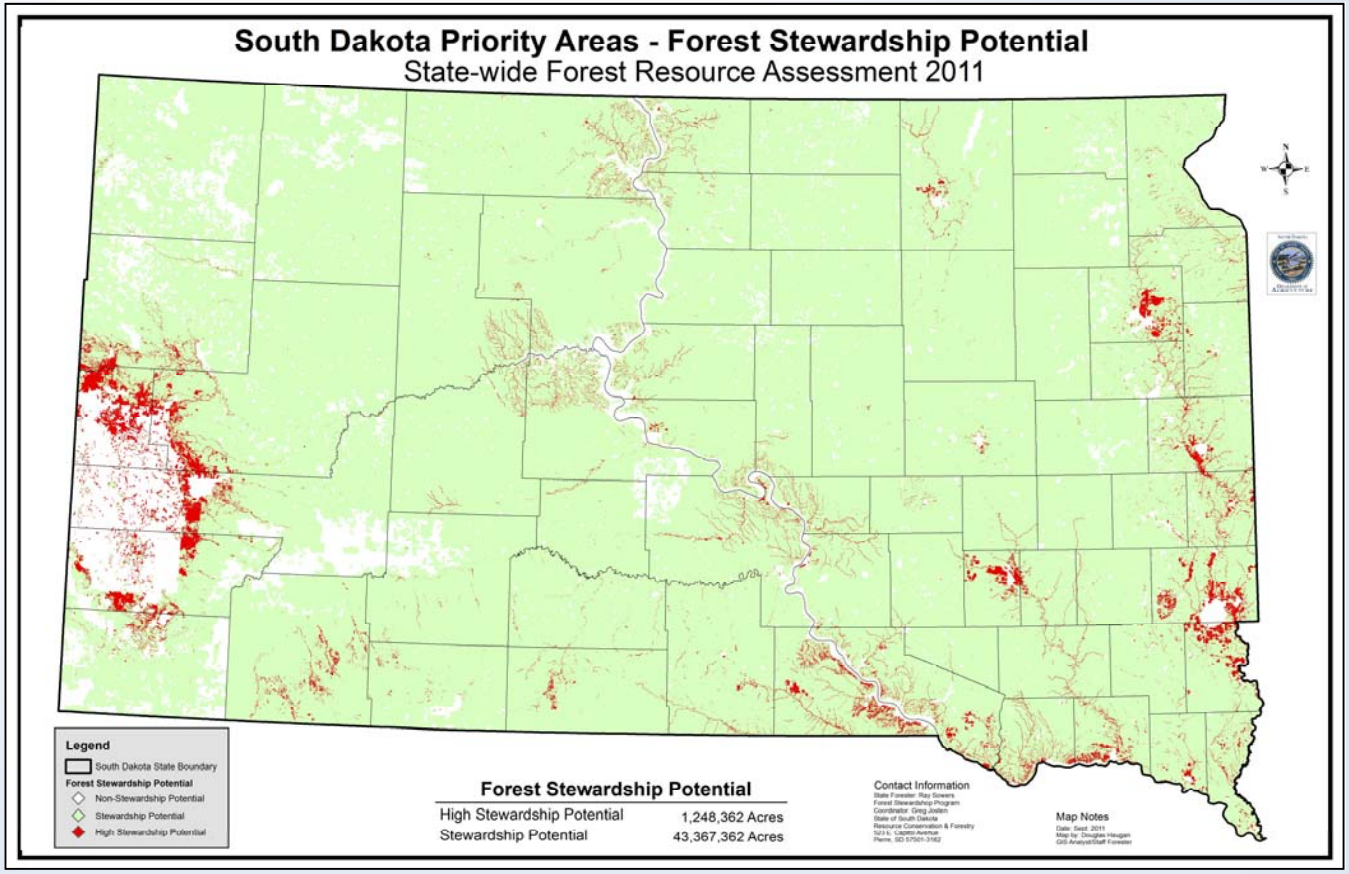
Hannah Brenden of Aberdeen, South Brown Conservation District, receives her 1st place prizes from Ken Gillaspie of East River Electric.

Service Forestry

Established through the 1990 Farm Bill, the Forest Stewardship Program encourages private forest landowners to manage their lands using professionally prepared forest stewardship plans. These plans consider and integrate forest resources, including timber, wildlife and fish, water, aesthetics, and all associated resources to meet landowner objectives. In South Dakota, since 1990, there have been 1,140 plans written covering 67,055 acres of forestland. In addition to forest stewardship plan preparation, the Forest Stewardship program is the primary source of funding for forest management technical assistance provided by the division.

Nationally the USDA Forest Service, through the State and Private Forestry Program, finances and administrates the Forest Stewardship Program. In South Dakota, the Division of Resource Conservation and Forestry administers the program with guidance provided by the State Forest Stewardship Coordinating Committee.

The State Forest Action Plan established a set of priority areas for emphasis during this planning period that includes all ownerships: federal, state, and private (see page 2). The Forest Stewardship Program only applies to rural private lands, and therefore is a subset of the state's priority areas called stewardship potential. Private lands classified as having high stewardship potential correspond to private lands within state priority areas, but outside of municipalities. All other private lands outside of municipalities that are included in state priority areas are classified as stewardship potential lands.



Service Forestry

Technical Assistance

In fiscal year 2011, the division prepared or approved three forest stewardship plans for private landowners covering 340 acres. Forest stewardship plans help private forest landowners plan for, and respond to, the threats identified in the state's Forest Action Plan.

Each year, approximately five percent of current forest stewardship plans are monitored to determine if the landowner is implementing practices as recommended in his/her plan. This activity satisfies the monitoring requirements of the Forest Stewardship Program, and helps accomplish monitoring needs identified in the state's Forest Action Plan. There are 85 current forest stewardship plans covering 6,294 acres in South Dakota based on the 10 year update requirement. This year, monitoring revealed 89 percent of landowners are implementing their plans on 97 percent of the current plan acres.

Assistance and planning by division service foresters resulted in the planting of 15,672 new trees and shrubs on 46.9 acres for conservation purposes. Seventeen of these windbreaks were new living snow fences covering 32 acres, resulting in the planting of 9,435 trees and shrubs. Funding for this program was provided by the South Dakota Department of Transportation. Service foresters reviewed, and approved, 55 windbreak projects for cost-share by the South Dakota Conservation Commission grants. Tree plantings support the Forest Action Plan strategies of expanding species diversity and providing a younger age class of trees to offset over-mature and dying trees.

Windbreak, Custer County.

Non-commercial Tree Thinning

Non-commercial thinning helps private forest landowners implement their forest stewardship plans, and address the threats outlined in the Forest Action Plan. As a result of a cooperative effort with the US Department of Agriculture—Natural Resources Conservation Service's Environmental Quality Incentive Program,

Thinning at Hayward Fuel Hazard Reduction Project.

Service Forestry

funds and technical assistance are available to private forest landowners for timber stand improvement projects. Under the agreement, the division provides landowners with technical assistance, and the Natural Resources Conservation Service provides cost-share for completing non-commercial thinning. Written prescriptions for 18 non-commercial thinning projects were prepared and when completed will result in the improvement of 487.6 acres of pine and hardwood stands. Fieldwork was completed in preparation for 18 non-commercial thinning projects covering 476.6 acres. All of the projects set up in fiscal year 2011 will be cost-shared through the Environmental Quality Incentive Program.

Rural Black Hills Home, Hayward Fuel Reduction Project.

Non-commercial thinning was completed on 14 projects involving 408.2 acres of forestland. The Black Hills Forest Health and Restoration competitive grant thinning project was completed and accounted for three of the projects covering 129 acres. The other 11 projects covering 279.2 acres were completed under the Environmental Quality Incentives Program.

Fuel Hazard Reduction

Division foresters provided assistance with contracting, setup, and administration of the Hayward Fuels Reduction project east of Hermosa. The project implemented a grant received by the Department of Agriculture, Wildland Fire Suppression Division to create fuel breaks on private forest lands in the Ghost Canyon area. Thinning was completed to fuel break standards with fuels either chipped or piled for burning on five ownerships covering 188.3 acres. Slash piles will be burned as snow cover permits. The project contributes to the Forest Action Plan strategies to improve forest health, reduce the potential for catastrophic fire, and implement hazardous fuels mitigation plans.

Division service foresters marked boundaries, and inventoried commercial sized trees on US Forest Service land along the US Highway 385 right-of-way from Sheridan Lake to Pactola Lake. The project was a cooperative endeavor with the South Dakota Department of Transportation and the Wildland Fire Suppression Division to open the stand to allow sunlight to reach the road to improve winter driving conditions. A total of 1,335 trees were marked for removal according to the prescription for the 10 mile corridor.

Mountain Pine Beetle Suppression

Service foresters contributed 1,664 hours to mountain pine beetle suppression efforts in the Black Hills through marking infested trees and following up with administration of the cost-share program for treating or removing infested trees.

Marking pine trees infested with mountain pine beetle.

Service Forestry

Forest Products Utilization

A survey of South Dakota sawmills that tracks utilization of trees from forests in South Dakota and surrounding states was completed by division service foresters. The survey is completed every five years as a cooperative effort with the US Forest Service's Northern Research Station as part of the Forest Inventory and Analysis Program. Data is combined with other inventory information to provide information about growth, health, and utilization of South Dakota's forest resources.

The division also completed and printed an update to the Directory of South Dakota Forest Products Industries. This booklet lists primary and secondary wood processors in the state, the type and amount of wood utilized, what they produce, and contact information. Contact the division to receive a copy of the directory.

These projects help address the problems of inadequate forest inventory information and underutilization of forest products by helping us understand what is being used, and promoting the availability of wood products from South Dakota.

Federal Project Reviews

Division personnel assisted the US Army Corps of Engineers as they developed the Missouri River Ecosystem Restoration Plan and Environmental Impact Statement. Staff reviewed and provided input on the various terrestrial system and potential ranking systems to be used to rank the present conditions of the system compared to historical conditions of that same system.

Cooperative Conservation Partnership Initiative

The division received two Cooperative Conservation Partnership Initiative grants from the USDA Natural Resources Conservation Service in July of 2010. One grant was for shelterbelt renovations and the other was for riparian tree plantings. Both grants are five year grants and cover South Dakota, North Dakota, Nebraska, and Kansas. The two grants brought $200,000 to South Dakota for federal fiscal year 2010 and $136,244 for federal fiscal year 2011. Funding for Cooperative Conservation Partnership Initiative comes from the Environmental Quality Incentive Program. This project supports the Forest Action Plan strategy to replace over-mature and dying trees in the state's windbreaks.

In 2010, 67 landowners applied for shelterbelt renovation cost-share, requesting a total of $758,701. In fiscal year 2011, 159 landowners applied for cost-share requesting a total of $2,058,420. Forty-one projects were funded in fiscal year 2010 for $422,224.52 and 51 projects were funded in fiscal year 2011 for $667,401.

South Dakota received no cost-share requests for riparian tree planting in either fiscal year so the riparian dollars were rolled into shelterbelt

County	Renovation Contracts
Aurora	6
Bennett	2
Bon Homme	2
Brown	3
Brule	6
Buffalo	1
Campbell	3
Charles Mix	2
Clay	1
Davison	2
Edmunds	4
Fall River	1
Gregory	7
Haakon	1
Hamlin	1
Hand	2
Hughes	6
Hutchinson	5
Jerauld	3
Kingsbury	7
Lake	1
Lyman	2
McPherson	2
Meade	3
Potter	1
Stanley	2
Todd	2
Tripp	7
Walworth	1
TOTAL	86

renovation projects. South Dakota also received fiscal year 2010 renovation and riparian dollars from Kansas and Nebraska and shelterbelt and riparian dollars from Nebraska for fiscal year 2011 as these states did not receive enough requests to spend the funds they were allocated. Therefore, South Dakota was able to spend more than its original allocation.

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. There are 188 Tree Farms in South Dakota covering 28,544 acres of forestland and windbreaks. There are 103 certified woodland Tree Farms covering 27,048 acres, and 85 windbreak Tree Farms covering 3,350 acres. Division foresters completed 15 of the 26 Tree Farm inspections in fiscal year 2011 covering 527 acres.

In fiscal year 2007, the South Dakota Tree Farm Committee established a program to help landowners hire consultant foresters to prepare forest stewardship plans for their property. The division provided a $3,500 grant to fund the program, which was matched by the Black Hills Forest Resource Association, and the South Dakota Tree Farm Committee. Landowners are required to pay at least 25 percent of the cost of the plan preparation. The South Dakota Tree Farm, Spearfish Forest Products, and the division added additional dollars to this program. At the end of fiscal year 2011, fourteen applications had been approved totaling $11,352. Twelve plans had been completed covering 1,444 acres at a cost of $9,282.

Division foresters nominated the winner of the 2011 Tree Farmer of the Year award. George Le Grand of Virgil, South Dakota was the Windbreak Tree Farmer of the Year Award Winner.

George Le Grand, center, Windbreak Tree Farmer of the year; J. Hinners (left) and N. Kafer (right), division foresters.

Information and Education

Stewardship foresters assisted with two water festivals and one landowner workshop which provided 1,865 hours of technology transfer. Stewardship foresters provided three Dakota Farm Talk radio programs. Topics were windbreak planning and site preparation, living snow fences in South Dakota, and windbreak renovation. Information and education supports all aspects of our state Forest Action Plan that seek to empower forest landowners with knowledge and understanding that they might implement management practices on their property.

Forest Health

Forest Health Management

Forest health management in South Dakota encompasses a wide array of growing conditions, management practices, and host species. The Division of Resource Conservation and Forestry provided more than 1,200 technical assists to private landowners, conservation districts, state parks, and cooperative extension personnel. These technical assists are targeted at threats identified in the South Dakota Forest Action Plan (see page 2). Other strategies used to address identified threats include educational materials and presentations, pest surveys, and preventative pest management. Many of these assists involved issues dealing with individual landowner trees, windbreaks, and shelterbelts. The results of diagnoses on current pest problems were communicated to extension services, conservation districts, the Department of Game, Fish and Parks personnel, and the general public through the weekly Pest Update located on the division's website (http://sdda.sd.gov/forestry/educational-information/pestalert-archives.aspx).

The mountain pine beetle program, in response to the epidemic in the Black Hills region of South Dakota, continues to yield positive results. The epidemic, now in its 14th year, shows no signs of decreasing. The beetle population is still increasing in many parts of the Black Hills.

Custer State Park Mountain Pine Beetle Projects

Significant resources are being devoted to the growing infestation of mountain pine beetle in the northern portion of Custer State Park. The division continued a program of spot baiting and thinning to reduce the rate of spread from the adjacent Black Elk Wilderness Area and Norbeck Wildlife Preserve to the ponderosa pine forests of the park.

Protection measures were also continued this year for keeping the remnant stand of limber pine free from mountain pine beetle attack. At the end of June, anti-aggregate pheromones (Verbenone) were placed on limber pine of appropriate diameter.

During fiscal year 2011, approximately 14,000 mountain pine beetle infested trees in Custer State Park were located and marked. These infested trees were cut and treated to kill the beetles. A large percentage of the infested trees were removed from the park by use of helicopter and traditional logging machinery.

Removal of mountain pine beetle infested trees via helicopter logging in Custer State Park.

Saw Mill Trapping Initiative

The division continued a mass-trapping program at sawmills in the Black Hills area to reduce the potential for pine engraver beetles emerging from infested

Forest Health

logs to infest trees outside of the mills. The trapping program has been very successful at keeping tree mortality adjacent to sawmills at lower levels than they would be without trapping.

Gypsy Moth Trapping Project

The gypsy moth monitoring program was conducted as a cooperative effort with the USDA Animal and Plant Health Inspection Service (APHIS) and the South Dakota Cooperative Extension Service. The gypsy moth is a defoliating insect that was introduced into New England from Europe in the 1860s. It has since spread into deciduous forests throughout the eastern United States and is now established in Wisconsin and Minnesota. Traps were placed at campgrounds and rest areas.

Actual size of adult emerald ash borer.

Emerald Ash Borer Initiative

In response to the threat emerald ash borer poses to South Dakota's ash trees, the division has sent materials alerting nurseries, conservation districts, campground owners, communities, and landowners to the potential enormous loss of ash trees to this invasive exotic beetle. This insect, originally brought in from Asia, has infested thousands of acres of forests, resulting in the loss of more than 8 million ash trees in Michigan and Ohio, and has been detected in many other states. The most recent detection was in St. Paul, MN. Since many of South Dakota's windbreaks are planted in green ash, and this same species is the most common city street tree in the state, the potential damage from an infestation of this insect is very high.

The most likely threat for South Dakota is from the accidental introduction of this pest through infested firewood. The adult emerald ash borer emerges from infested wood during the summer months which is timed perfectly with high campground use from visitors from other states. The division has developed a program to educate campground owners and visitors of the possibility of moving this insect and the need to dispose of any firewood brought in from outside the state.

Educational poster about the potential for moving pests through firewood.

Dutch Elm Disease

Dutch elm disease was discovered in Cleveland, OH in 1930. Since then it has continued to be a threat to the elm trees that remain in the communities across South Dakota. Dutch elm disease surveys were conducted by division personnel in six communities and a total of 104 infected trees were marked for removal.

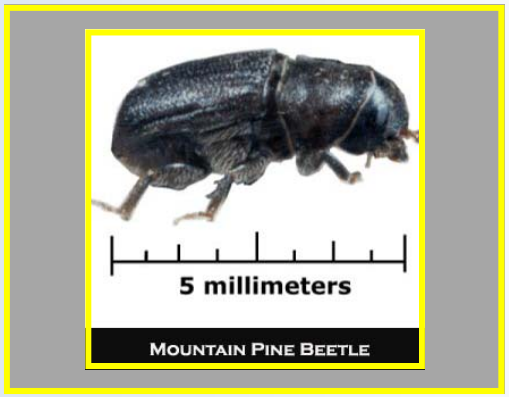
Black Hills Forest Health and Restoration

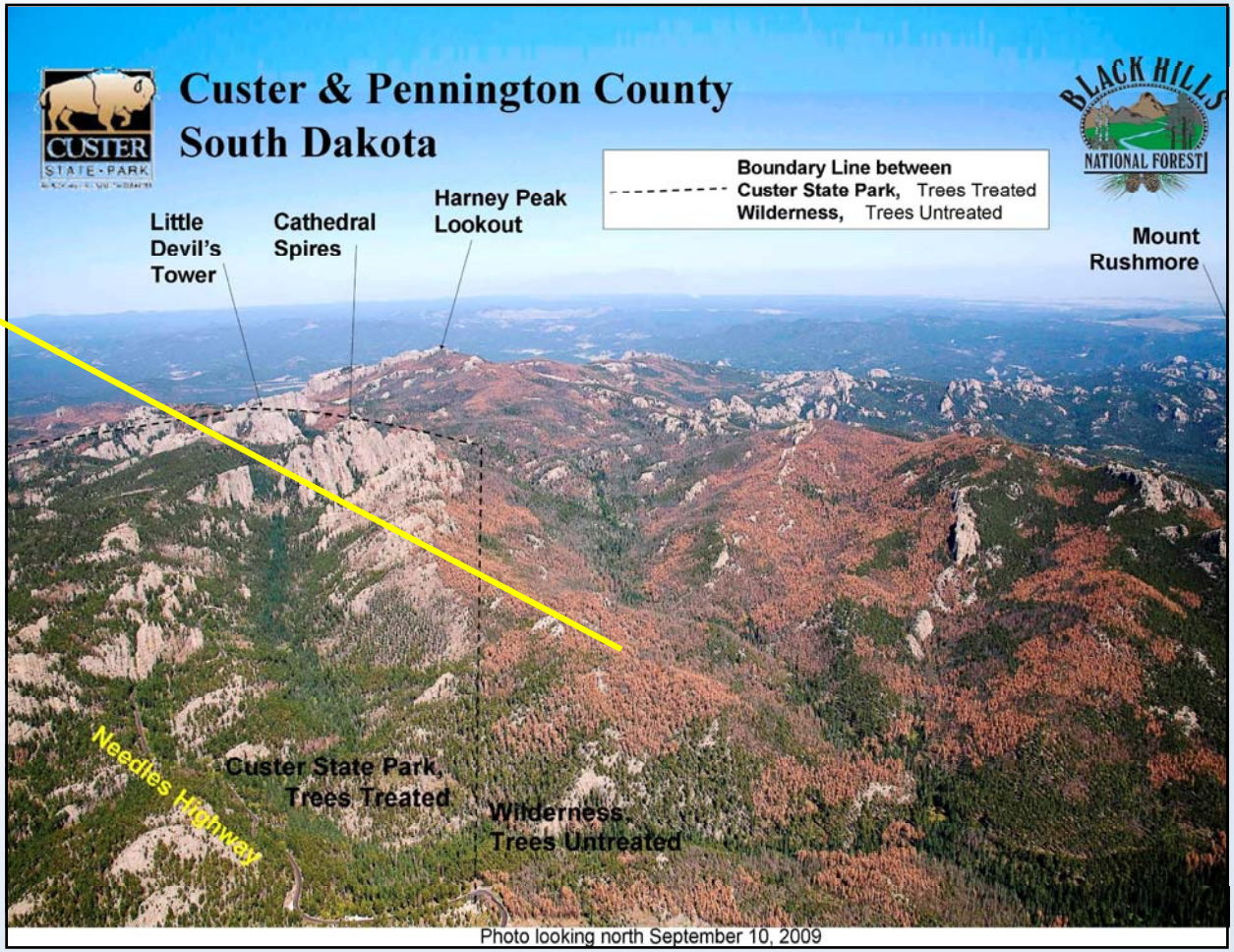
Forest Health

The division conducted mountain pine beetle surveys as well as detection and treatment work on state and private lands in the Black Hills. A grant of $170,000 from the Black Hills National Forest was used to help landowners offset the cost of treating their infested trees.

A total of 24,328 acres was surveyed on 514 different ownerships for mountain pine beetle infestations. A remarkable 54,294 infested trees were marked for treatment.

The division contracted for aerial photography of the Sylvan Lake area and the northern portion of the main body of Custer State Park. This photography was used to track mountain pine beetle infestations within the park and the adjacent Black Elk Wilderness and Norbeck Wildlife Preserve.





Mountain pine beetle infestation in the Black Elk Wilderness area, adjacent to Custer State Park.

Mountain Pine Beetle in the Black Hills

Since 1996, the mountain pine beetle infestation has dramatically affected the ponderosa pine forest of the Black Hills. The beetle is a native insect and well adapted to the natural conditions of the region. The Black Hills experienced widespread epidemics in the 1890s, 1940s, 1970s, and the present.

Epidemic Status in the Black Hills

The mountain pine beetle epidemic continues to grow and expand within the Black Hills National Forest. Areas with expanding beetle populations and subsequent tree mortality include Bear Mountain, Custer Peak, the Deerfield area, and the Black Elk Wilderness Area. Pockets of beetle infestations are also more prevalent throughout the entire Black Hills. This indicates that the current beetle epidemic has not peaked and will continue to develop throughout the Black Hills, probably for at least another five years.

A forest health evaluation done by the USDA Forest Service in May of 2008 states that "the number of trees killed per acre found in parts of Norbeck/Black Elk Wilderness is extremely high. There are large portions of wilderness that already have 100% mortality of the pine overstory, and this level of mortality is expected to continue in the near future." The evaluation also states that "the only effective long-range strategy to minimize beetle-caused mortality is controlling stand conditions through silvicultural means over large landscapes and monitoring for areas of beetle buildup." The infestation is moving east towards Mt. Rushmore National Memorial.

Mountain pine beetle infestation moving east toward Mt. Rushmore National Memorial.

In response to this expanding population, the division and Custer State Park jointly developed a detailed plan to aggressively manage the infestation. Harvesting infested trees and thinning to reduce stand susceptibility has been a proven means of slowing beetle populations. In addition to these traditional actions, pheromones—synthetic forms of attractants naturally produced by the beetles—were used to purposely draw beetles to specific trees. Baited trees draw many times the normal number of beetles, essentially 'soaking up' a population. Once the trees are infested, they are felled, cut into 2-foot lengths, and left to dry out. The drying wood does not provide sufficient food for the larvae and therefore most die before emerging. Pheromones are also being employed to repel beetles from specific trees in an innovative effort to protect the rare limber pine trees present in the park. The specific mountain pine beetle projects in Custer State Park include:

- **Spot baiting 2001:** A 230 acre baiting and thinning project was initiated and completed by spring 2001. This project successfully eliminated several small infestations within the park.
- **Spot baiting 2005-2010:** Trees near existing infestations were baited in 2005 and in

Mountain Pine Beetle in the Black Hills

subsequent years trees were baited near the previous year's trees. Baited and naturally infested trees were felled and cut into 2-foot lengths and left to dry, killing most of the beetle larvae that were inside them.

- **Total trees treated in Custer State Park:**
  - ⇒ 2005: 3,000
  - ⇒ 2006: 4,100
  - ⇒ 2007: 11,900
  - ⇒ 2008: 21,000
  - ⇒ 2009: 22,000
  - ⇒ 2010: 14,000

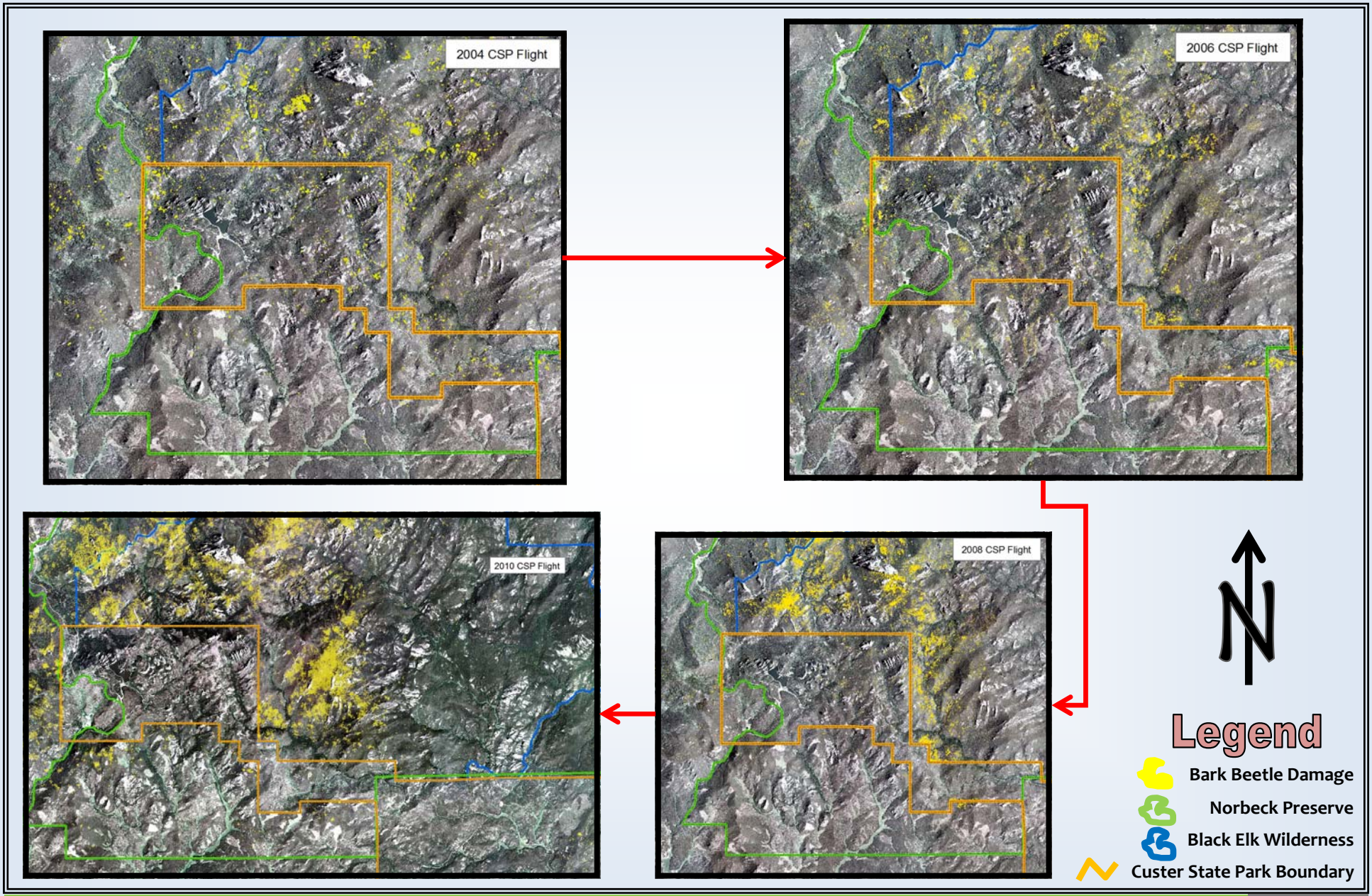

Division foresters marking beetle infested trees.

- **Special appropriations buffer winter of 2007-2008:** 450 acres around the border of the park were thinned to slow bark beetle movement into or out of the park. Parts of those acres were piled for aesthetic or fire danger reasons. This was finished in 2008.
- **Anti-aggregation baiting of limber pine 2005-2010:** A relic stand of limber pine in the Cathedral Spires has received National Natural Landmark status from the National Park Service. Limber pine is a preferred host to the mountain pine beetle and there is concern that South Dakota could lose this unique stand. Anti-aggregation pheromones that repel mountain pine beetles from limber pine trees were placed on individual trees. Less than ten limber pines have become infested with mountain pine beetles as a result of this practice. *These pheromones are not known to work on ponderosa pine.*
- **Commercial tree harvesting 2009:** The same area where all of these projects have been taking place have been commercially logged to reduce stand density, which reduces susceptibility to beetle attack and fire risk.
- **Helicopter logging 2009:** A helicopter logging crew was contracted to remove the infested trees that would have normally been treated on site in remote locations. The contract was extended to harvest more trees in these locations to reduce stand density on more acres.
- **Private lands surveying 2010:** 24,328 acres was surveyed on 514 different private ownerships. A total of 54,294 infested trees were marked for treatment.
- **Monitoring:** Division personnel will continue to monitor this area of the park and the Black Hills region for any new infestations.

Future Needs

The mountain pine beetle problem is not yet completely eliminated in the Black Hills. Custer State Park, Mt. Rushmore National Memorial, and private lands are at risk from unchecked infestations on the surrounding Black Hills National Forest. This risk demands that control efforts be continued in the coming years. A continued proactive approach to management will reduce the risk of mountain pine beetle and provide a barrier for the ongoing spread of beetle populations. These management strategies will help to ensure that Custer State Park, and surrounding lands remain a place of beauty and biodiversity in the Black Hills of South Dakota.

Mountain Pine Beetle in Custer State Park



Capitol Christmas Tree

Every year thousands of guests visit the South Dakota State Capitol to enjoy the Christmas tree display. More than 90 Christmas trees are on display in the Capitol, and are decorated by schools, churches, communities, and civic groups from across the state. The 30th annual Christmas at the Capitol holiday display featured the 2010 theme: "Yesterday, Today, and Tomorrow". Every year, the division searches out the perfect tree to be the crown jewel in the display. The two-story South Dakota white spruce tree featured in the Capitol rotunda was donated by South Dakota State University.

History of Resource Conservation and Forestry

The Division of Resource Conservation and Forestry was created in 1995 by Executive Order of Governor William Janklow. Prior to the Executive Order, the Division of Conservation and the Division of Forestry operated as separate divisions within the Department of Agriculture. Due to staffing levels and similar missions, the divisions were combined. While the two divisions evolved to have similar missions, their origins were very different.

Division of Conservation

The 1937 South Dakota Legislature passed enabling legislation that allowed local communities to create soil conservation districts. As part of the State Soil Conservation District Law of 1937, the State Soil Conservation Committee was created. The basic role of this committee was to oversee the formation of the conservation districts and to coordinate the conservation of South Dakota's soils.

Agriculture operation in the early 1900s.

Originally created by the State Legislature in 1937, the Division of Conservation was created within the Department of Environmental Protection (which would later become the Department of Environment and Natural Resources) to provide administration to the Conservation Commission. The 1975 State Legislature redirected the Division of Conservation to perform those Conservation Commission functions relative to conservation districts. It was also in 1975 when the Division of Conservation was transferred to the Department of Agriculture.

In 1991, the state developed the Coordinated Soil and Water Conservation Plan. This plan was created with public input to create specific goals and strategies to address soil and water conservation needs. In 2007, the plan was revised and renamed the Coordinated Plan for Natural Resources Conservation and was expanded to include air, wildlife habitat, and recreation along with soil and water quality.

The Conservation Division is charged by state law to provide assistance to the conservation districts to implement proper accounting and financial reporting procedures. The Conservation Division also manages the Revolving Loan Program, Coordinated Plan for Natural Resources Conservation grant program, Soil Conservation Award Program, Resource Conservation Speech Contest, and technical assistance to conservation districts on behalf of the Conservation Commission.

History of Resource Conservation and Forestry

Division of Forestry

The Division of Forestry was established in 1945 as part of the Department of Game, Fish and Parks. The division was administered by a State Forester who was required to be a degreed forester. The Division of Forestry was made responsible for all forestry activities of all state departments including fire protection, tree distribution, timber management, park development, and law enforcement.

In 1952, the Forestry Division established a tree distribution facility in Pierre. By 1955, the Forestry Division had distributed over 2 million trees out of this location. In 1956 the division began the search to find the location for a nursery. In 1958, the Big Sioux Conifer Nursery was dedicated in Watertown. By 1977, the Big Sioux Nursery dropped 'conifer' from their name and began growing hardwoods as well.

Forestry logging operation in the early 1900s.

In 1984, the Division of Forestry was moved from the Department of Game, Fish and Parks to the Department of Agriculture by a Governor Proclamation and confirmed by the State Legislature.

Division of Resource Conservation and Forestry

Even after the combining of the Divisions of Conservation and Forestry into the Division of Resource Conservation and Forestry in 1995, the new division has continued to evolve. In 1996, the Big Sioux Nursery was given to the conservation districts. In 2001, fire suppression duties were transferred to the new Division of Wildland Fire Suppression within the Department of Agriculture.

Retired Division of Resource Conservation and Forestry logos.

In 2010, the state adopted the South Dakota Forest Action Plan to identify threats to South Dakota's forests and formulate strategies for the state to implement to address those threats. The Division of Resource Conservation and Forestry is currently working at integrating the Forest Action Plan into its planning and management efforts.

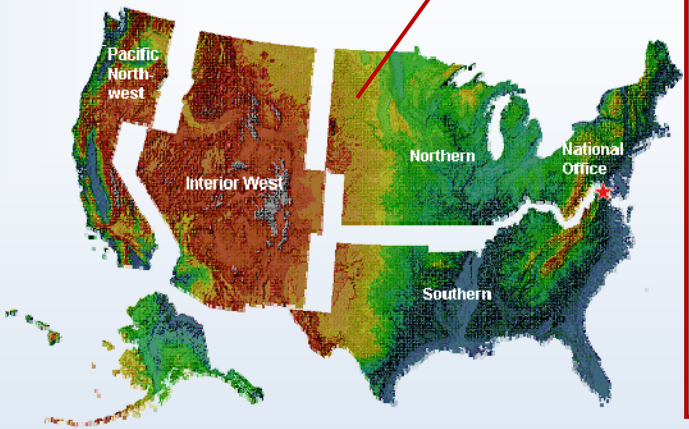
Forest Inventory and Analysis

The Forest Inventory and Analysis (FIA) program collects, analyzes, and reports information on the status and trends of America's forests. Information is collected on:

- how much forest exists;
- who owns it;
- how it is changing;
- how the trees and other forest vegetation are growing; and
- how much forest has died and/or been removed.

This information can be used in evaluating wildlife habitat conditions, assessing the sustainability of ecosystem management practices, and supporting planning and decision-making activities undertaken by public and private enterprises.

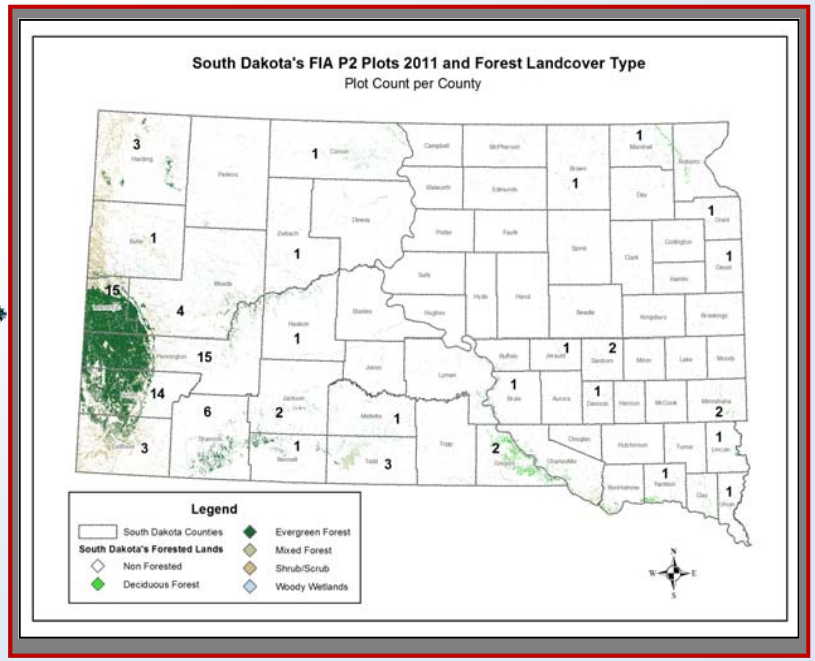
The FIA program combines this information with related data on insects, diseases, and other types of forest damaging agents and stresses. This is done to assess the health, condition, and potential future risks to forests. The program also projects what the forests may be like in 10 to 50 years under various scenarios. This information is essential for evaluating whether current forest management practices are sustainable in the long run and whether current policies will allow future generations to benefit from the many uses that America's forests provide.



During fiscal year 2011, division staff completed the first panel of the third annualized inventory. These re-inventories will show how the state's forest resources are changing. During this time, the State of South Dakota received $62,000 from the USDA Forest service's Northern Research Station—Forest Inventory Analysis Unit to inventory 93 P2 forest inventory plots and 25 QAQC plots.

The most recent five year report on the annualized inventory in South Dakota is titled "South Dakota's Forests, 2005" and can be found at: www.nrs.fs.fed.us/pubs/9724.

The most recent annual report on the annualized inventory in South Dakota is titled "South Dakota's Forest Resources, 2010" and can be found at: www.treesearch.fs.fed.us/pubs/38146.



Missouri River Flooding

Much of the state has received record setting levels of precipitation in fiscal year 2011. Not only has South Dakota been dealing with wetter than normal conditions, much of the region has as well. This perfect storm of hydrologic events has led to massive flooding of the Missouri River. Those communities along the Missouri have seen an inundation of water into their communities and many wonder what the short– and long-term effects this water will have on their trees.

Flooding in Griffin Park along the Missouri River in Pierre.

Photo credit: Patrick M. Callahan.

In response to this critical event, the division created a website dedicated to flooding information and resources. Educational presentations were conducted in the Pierre/Fort Pierre area and the Dakota Dunes area. Foresters answered many questions about what landowners can expect to see happen to their trees for the next three to five years and what they can do to help mitigate the damages. Field visits were scheduled with homeowners to look at affected trees and first-hand recommendations for removals and recovery were offered to those landowners requesting this free service.

Flooding in the Dakota Dunes community.

Photo credit: www.disasterrecovery.sd.gov/

The Effects of Flooding on Trees

The primary effect of flooding is the reduction of oxygen in the soil. Most of the fine roots of the tree are in the upper six inches of soil; these roots are responsible for the uptake of water and oxygen. As oxygen levels decrease, the fine roots begin to die. As the roots die, the tree's ability to absorb water decreases and the foliage begins to wilt.

It may take several years for a mature tree to recover from a summer of flooding. The trees will be vulnerable to attack by pests and pathogens. You should inspect your trees on a regular basis to identify and manage any disease outbreak. During this time you should not fertilize the trees or prune any living branches from the crown unless they are broken or a hazard. Dead branches should be removed.

Missouri River Flooding

As the soils dry, you may need to water your tree. Much of the root systems will have been damaged and your tree may not have a sufficient number of roots left to absorb the necessary amounts of water to sustain itself.

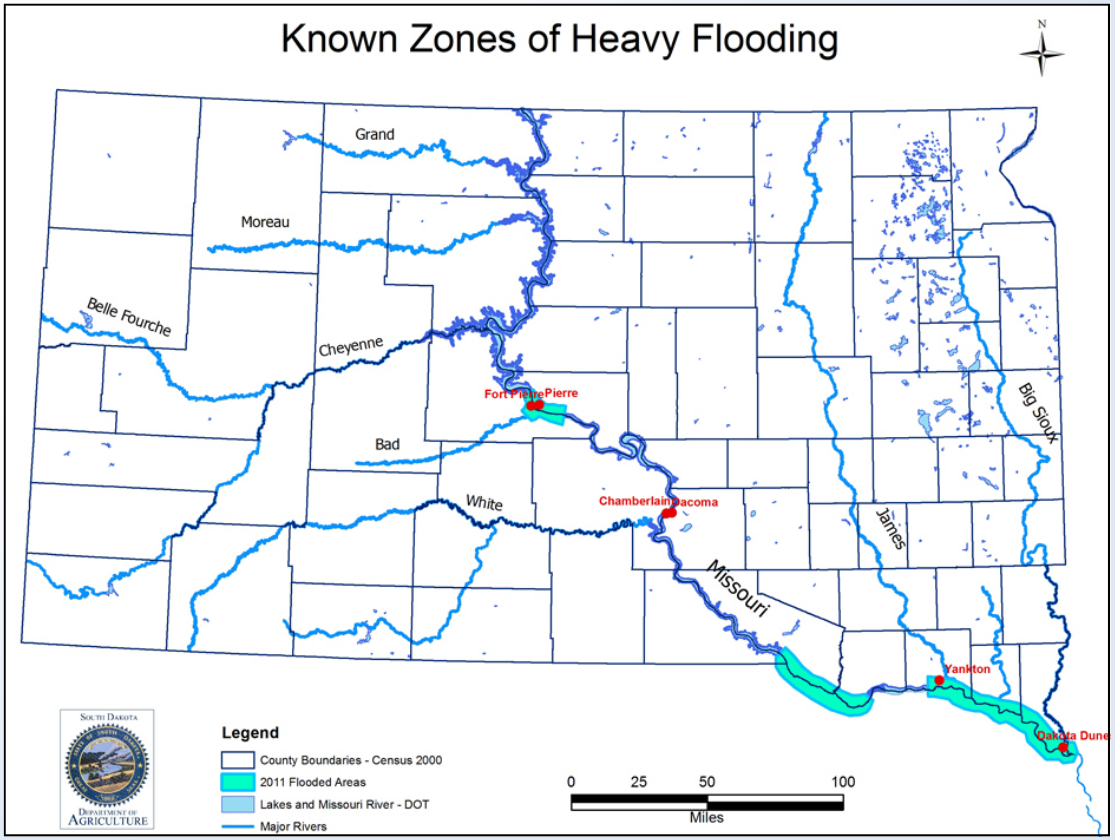
The most common symptoms associated with flooding are:

- Leaf discoloration, usually yellowing;
- Leaf scorching and wilting;
- Premature fall color;
- Premature defoliation;
- Sprouting along the trunk;
- Twig and branch dieback; and
- With severe and persistent flooding, death.

These symptoms may occur during or after flooding.

High water mark on Russian olive trees along the Hillsview Golf Course in Pierre.

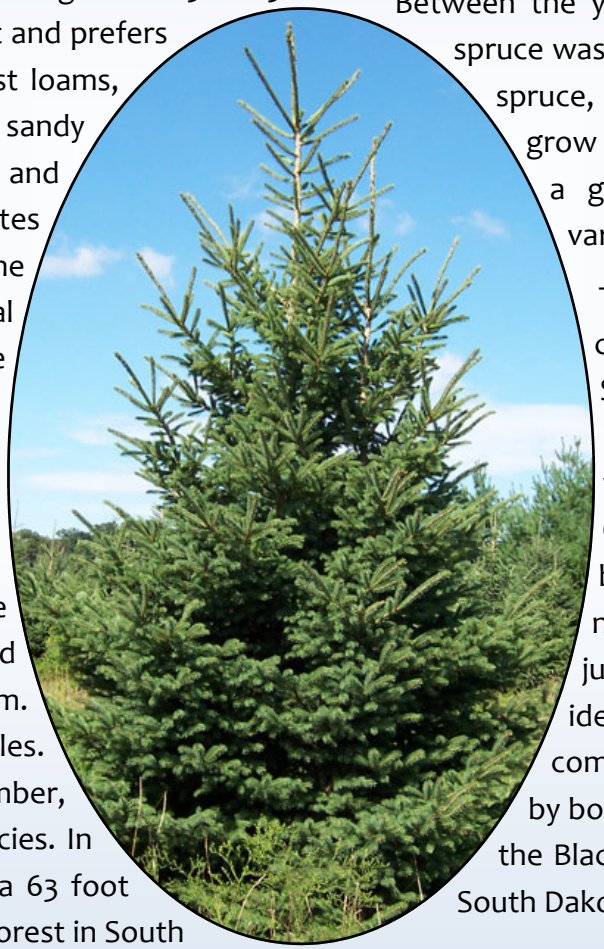
Evergreens are extremely sensitive to flooding as shown by the leaf discoloration and eventual death of this tree in the flood zone located in southeast Pierre.



South Dakota State Tree

Black Hills spruce is a naturally occurring variety of white spruce native to South Dakota. It is more compact and slower growing than its eastern cousin, white spruce and can live 150+ years. Its needles are denser and are darker in color, varying from bright green to bluish green. It was first seen by French explorers in 1743.

Black Hills spruce ranges from 30 to 60 feet in height and 15 to 25 feet in width. The tree is fairly drought resistant and prefers full sun exposure. It grows best in acidic, moist loams, but adapts to many soils including gravelly or sandy loams to fine clay soils. It is flood intolerant and sensitive to soil compaction. Its United States Department of Agriculture growth hardiness zone rating is 2. It makes a good yard or ornamental tree and is good winter cover. The seeds provide food for songbirds, upland ground birds, and small mammals. The bark is eaten by porcupines and the foliage is lightly browsed by deer.



Black Hills spruce is used in conservation plantings and agroforestry windbreaks. The Plains Native Americans used the inner bark and shoots for food and the hardened sap for gum. They collected the spruce wood for tipi poles. Today the wood is used for dimensional lumber, pulpwood, and is a popular Christmas tree species. In 1997, the National Capitol Christmas tree was a 63 foot Black Hills spruce from the Black Hills National Forest in South Dakota.

Common diseases include Lirula needle blight. Common insect pests include spider mite, spruce needle miner, pine needle scale, yellow-headed spruce sawfly, and aphids.

Between the years of 1933 and the early 1970's, Black Hills spruce was considered to be a distinct variety of the white spruce, variety *densata* referring to its tendency to grow in dense stands. However, today it is considered a geographical variety rather than a botanical variety of white spruce.

The Black Hills spruce had a rocky and controversial start as South Dakota's State Tree. Some contended that the cottonwood would be more suitable as the State Tree, due to its widespread distribution throughout the state. Others thought that the Black Hills spruce, because of its tricky and controversial scientific name, should be dropped and replaced with the juniper (or cedar) as the State Tree. Both of these ideas were researched and dismissed by a joint committee. The Committee's report was accepted by both the Senate and the House. On March 10, 1947 the Black Hills spruce became the official State Tree of South Dakota (South Dakota Codified Law § 1-6-11) .

State and Private Forestry Competitive Grants

Forest Landowner Education—"Today's Forest"

The division is the lead agency in a multi-state project that will bring seven management workshops to forest landowners in the Black Hills region of South Dakota, Wyoming, and Nebraska. The seven workshops will be repeated in each state, and posted on the internet so absentee landowners will also have access to the information.

The first workshop about forest management and ecology was held in June 2011 at the Brownsville Fire Hall in South Dakota, and drew a crowd of 40 enthusiastic landowners.

The workshop was repeated in Sundance, Wyoming and Chadron State Park in Nebraska. The next step is to post the workshop to the internet. Internet posting is possible through an agreement with South Dakota State University Cooperative Extension Service.

Forest landowners listen to Skip Smith explain the regenerative process of aspen.

The next workshop will cover forest health and invasive species with special emphasis on mountain pine beetles. Future workshops will cover best management practices for protecting water quality during silvicultural operations, Firewise, taxes, estate planning, conservation easements, markets, contracting, stewardship planning, and forest certification.

Black Hills Landscape Fuels Reduction

The Black Hills Landscape Fuels Reduction competitive grant is a three year grant the division received from the US Forest Service to address thinning forest stands, reducing fuel loading, and conducting prescribed burns where they can be done safely. Most of the work under this grant was done in Custer State Park to help them manage overstocked stands and reduce forest fuels. Accomplishments for the first year are:

1. Prescribed fire on 408 acres;
2. Burned 200 machine piles;
3. Burned 3,000 hand piles associated with fuel breaks;
4. Created 30 acres of fuel break;
5. Thinning on 153 acres; and
6. Encroachment removal on 10 acres via a Fecon masticator.

These projects will help Custer State Park gain valuable experience in landscape level planning and design, layout and implementation of large contracts, successful prescribed fire techniques, and collaborating with other agencies. Implementing large-scale and complex prescribed burns will lead to better future collaboration as well as camaraderie between agencies.

Financial Assistance to Local Organizations

Summary of Grants Awarded by County, Program , and Amount Awarded during fiscal year 2011

County	Grant Recipient	Program	Award Amount	Local Match	Total Project Costs
Custer	Custer State Park	BHC	$ 70,000.00	$ 70,000.00	$ 140,000.00
State Wide	Wildland Fire Suppression	BHC	$ 33,000.00	$ 33,000.00	$ 66,000.00
Miner	Miner Conservation District	CSW	$ 9,150.00	$ 9,150.00	$ 18,300.00
	Miner Conservation District	CSW	$ 24,903.00	$ 26,618.00	$ 51,521.00
	Miner Conservation District	CSW	$ 19,000.00	$ 19,000.00	$ 38,000.00
Butte	Butte Conservation District	CSW	$ 46,780.00	$ 34,760.00	$ 81,540.00
Marshall	Marshall Conservation District	CSW	$ 32,000.00	$ 70,000.00	$ 102,000.00
Yankton	Yankton Conservation District	CSW	$ 13,420.00	$ 26,390.00	$ 39,810.00
Mellette	Mellette Conservation District	CSW	$ 15,183.00	$ 21,946.00	$ 37,129.00
	Mellette Conservation District	CSW	$ 21,000.00	$ 28,000.00	$ 49,000.00
	Mellette Conservation District	CSW	$ 78,700.00	$ 27,000.00	$ 105,700.00
Beadle	Beadle Conservation District	CSW	$ 52,000.00	$ 150,000.00	$ 202,000.00
Corson	Corson Conservation District	CSW	$ 17,500.00	$ 17,500.00	$ 35,000.00
Perkins	Perkins Conservation District	CSW	$ 76,426.00	$ 95,372.00	$ 171,798.00
Miner	Miner Conservation District	CSW	$ 3,745.00	$ 12,531.00	$ 16,276.00
Brookings	Brookings Conservation District	CSW	$ 27,400.00	$ 12,200.00	$ 39,600.00
	Brookings Conservation District	CSW	$ 61,880.00	$ 134,540.00	$ 196,420.00
Meade	Elk Creek Conservation District	CSW	$ 70,500.00	$ 160,500.00	$ 231,000.00
Moody	Moody Conservation District	CSW	$ 30,062.00	$ 11,342.00	$ 41,404.00
Jackson	Jackson Conservation District	CSW	$ 63,500.00	$ 142,000.00	$ 205,500.00
Day	Day Conservation District	CSW	$ 28,253.00	$ 330,329.00	$ 358,582.00
	City of Webster	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
	City of Webster	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00

Financial Assistance to Local Organizations

County	Grant Recipient	Program	Award Amount	Local Match	Total Project Costs
Hamlin	Hamlin Conservation District	CSW	$ 53,000.00	$ 256,000.00	$ 309,000.00
	Hamlin Conservation District	CSW	$ 6,176.00	$ 8,394.00	$ 14,570.00
Lawrence	Lawrence Conservation District	CSW	$ 52,000.00	$ 57,000.00	$ 109,000.00
	City of Whitewood	UCF	$ 4,195.85	$ 4,195.85	$ 8,391.70
Minnehaha	Minnehaha Conservation District	CSW	$ 40,020.00	$ 36,060.00	$ 76,080.00
	Sioux Falls Parks	UCF	$ 1,200.00	$ 1,200.00	$ 2,400.00
Brule-Buffalo	Brule-Buffalo Conservation District	CSW	$ 23,270.00	$ 35,120.00	$ 58,390.00
State Wide	PLT	SPC	$ 12,000.00	$ 12,000.00	$ 24,000.00
	South Dakota State Parks	UCF	$ 2,500.00	$ 2,500.00	$ 5,000.00
Pennington	Individual Land Owner	STW	$ 250.00	$ 250.00	$ 500.00
	South Dakota Tree Farm	STW	$ 3,000.00	$ 3,000.00	$ 6,000.00
Lawrence	Individual Land Owner	STW	$ 750.00	$ 750.00	$ 1,500.00
	Individual Land Owner	STW	$ 750.00	$ 750.00	$ 1,500.00
Brookings	City of Elkton	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
	City of Volga	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
Clay	City of Wakonda	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
Hutchinson	City of Freeman	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
Deuel	City of Clearlake	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
	Deuel Area Development	UCF	$ 1,000.00	$ 1,000.00	$ 2,000.00
Brown	City of Aberdeen	UCF	$ 5,000.00	$ 5,000.00	$ 10,000.00
TOTALS	-	-	**$ 1,006,513.85**	**$ 1,862,397.85**	**$ 2,868,911.70**

- UCF = Urban & Community Forestry Challenge Grant
- BHC = Black Hills Competitive Grant
- CSW = Coordinated Natural Resource Conservation Grant
- SPC = Special Conservation Grant
- STW = Stewardship Grant

For additional copies of this report contact the Division office in Pierre at:

- **Phone: 605.773.3623**
- **1.800.228.5254 (Toll Free in-state only)**
- **Fax: 605.773.4003**
- **Email: SDRCF@state.sd.us**
- **Website: www.sdda.sd.gov/forestry**

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