

# Coordinated Plan for Natural Resources Conservation



# **SOUTH DAKOTA COORDINATED PLAN FOR NATURAL RESOURCES CONSERVATION FUNDS**

*Prepared for the State Conservation Commission by*

South Dakota Department of Agriculture

Division of Resource Conservation and Forestry

523 Capitol Ave

Pierre, South Dakota 57501-3182

HDR Engineering, Inc.

6300 S. Old Village Place

Suite 100

Sioux Falls, SD 57108-2102

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December 2012

Large Cover Photo: Pond built using Coordinated Natural Resources Conservation Grant Funds.



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## Executive Summary

South Dakota citizens historically have recognized the benefits of conserving natural resources within their state. Widespread recognition of conservation throughout the state was immediately recognized as drought devastated the Great Plains during the 1930's Dust Bowl. South Dakota responded quickly to the subsequent request from President Franklin Roosevelt urging the states to organize soil conservation districts. As a result, South Dakota was one of the first states to establish soil conservation districts.

South Dakota's commitment to conservation continues as many conservation partners proactively work together to implement federal, state, and local conservation programs which protect and enhance the State's many natural resources. In order to understand success of the conservation efforts in South Dakota, an evaluation of the past and present conditions was completed by the conservation partners.

The evaluation included a look at the following resources: water, soil, air, recreation, and wildlife. Next, the goals and results of the 2007 Coordinated Plan for Natural Resources Conservation were assessed. The results included some goals that were met or exceeded, while others were partially met or not met.

For example, efforts put forth toward recreation and wildlife exceeded all the goals within the 2007 plan, while objectives falling under air quality and public awareness goals were partially met. These evaluations allowed the conservation partners to create viable goals and objectives for the next seven years. Please join us and do your part to protect and enhance our rich heritage.



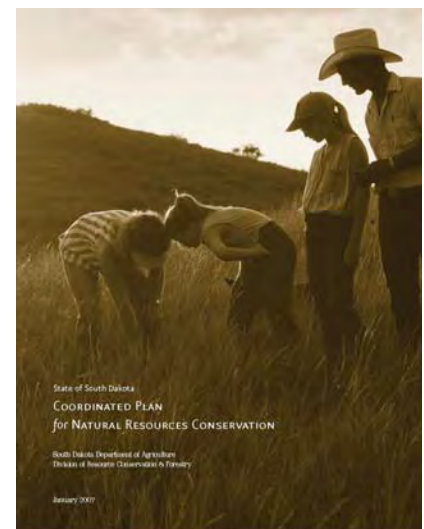
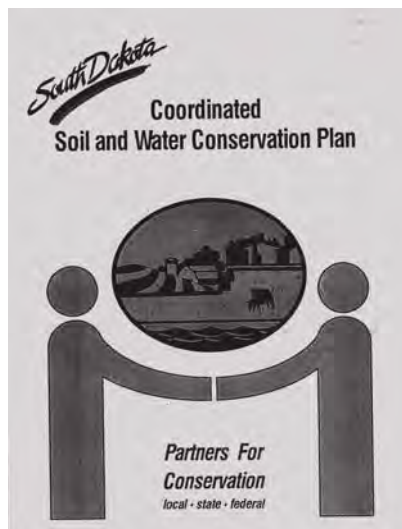


## Chapter 1: Introduction

The Coordinated Plan for Natural Resources Conservation provides a collaborative approach among federal, state, local sponsors, and the public to develop a proactive conservation plan based on an assessment of previous conservation efforts and current conditions. Goals and objectives were drafted based on South Dakota's (the State's) conservation priorities to provide information and assist the State Conservation Commission. The initial State conservation plan, called the "Coordinated Soil and Water Conservation Plan," was implemented in 1991. This plan achieved noteworthy improvements, including reduction of cropland erosion on over 3.8 million acres to tolerable levels and improvement of rangeland condition from poor to fair on 1.7 million acres. Revisions and additions were made following input gained from public surveys and meetings, as well as input from an advisory committee composed of representatives from federal, state, and local agencies. The objective of this current effort is to evaluate the results of the 2007 "Coordinated Plan for Natural Resources Conservation" in order to better understand areas of success and those areas needing further improvements. This evaluation assisted in the decision making process for the goals to aim for in the 2012 coordinated conservation plan, and therefore provide South Dakota's conservation partners a clear path toward targeting projects.

Well-functioning ecosystems provide potable water, irrigation water, productive soils, production of food and fiber, fish and natural habitat, pollination, and flood control, as well as many other benefits. U.S. Department of Agricultural (USDA) Economic Research Service indicates that South Dakota residents rely heavily on agricultural commodities as 90 percent of the land within the State is utilized for agricultural purposes (USDA 2012 Economic Research Service<sup>1</sup>). Furthermore, the tourism industry within South Dakota exceeded \$1 billion in 2010 (Madden 2010<sup>2</sup>) and relies heavily on the conditions of lakes, rivers, and grassland-wetland complexes, the key producers of the rich fish and wildlife resources, providing recreational opportunities to both residents and visitors. Therefore, sustainable agricultural practices are key to maintaining long-term productive agricultural and natural resources.

The State recognizes the strong ties between natural resources and the economy, and therefore designated a State Conservation Commission. The Conservation Commission was delegated administrative oversight of the State's conservation districts, development and implementation of the State's Coordinated Plan, Conservation Districts Revolving Loan Fund, and setting natural resources policy (South Dakota State Statute 38-7-26<sup>3</sup>). There are 69 conservation districts organized under state law (SDCL Chapter 38-8). The conservation districts are local units of government that implement natural resource policy by partnering with local citizens, and local, state, and federal units of government. This draft, which will become the plan, provides a status update of current management efforts and programs, past and present conditions, accomplishments of the 2007 Coordinated Conservation Plan for Natural Resources Conservation, and goals/objectives for 2012-2019.



### References

1. USDA Economic Research Service. 2012. State Fact Sheets South Dakota. Accessed on 06/28/2012 from [http://www.ers.usda.gov/data-products/state-fact-sheets/state-data.aspx?StateFIPS=46&StateName=South Dakota](http://www.ers.usda.gov/data-products/state-fact-sheets/state-data.aspx?StateFIPS=46&StateName=South%20Dakota).
2. Madden, M.K. 2010. Economic and fiscal impacts associated with the vacation travel industry in South Dakota.
3. South Dakota State Statute 38-7-26



## Chapter 2: Current Management Efforts and Programs

### Surface Water Quality

South Dakota Department of Environment and Natural Resources (SD DENR) monitors surface waters in the State through an ambient water quality monitoring program, water quality surveys, Total Maximum Daily Load (TMDL) assessments, Surface Water Discharge (SWD) permits, and state nonpoint source implementation projects. Through these monitoring efforts, SD DENR identifies water quality issues pursuant to Clean Water Act (CWA) Section 303(d) based on set standards stated in the Administrative Rules of South Dakota Chapter 74:51:03 for the following beneficial use classifications:

- Domestic water supply waters;
- Coldwater permanent fish life propagation waters;
- Coldwater marginal fish life propagation waters;
- Warmwater permanent fish life propagation waters;
- Warmwater semi-permanent fish life propagation waters;
- Warmwater marginal fish life propagation waters;
- Immersion recreation waters;
- Limited contact recreation waters;
- Fish and wildlife propagation, recreation, and stock watering waters;
- Irrigation waters; and
- Commerce and industry waters.

SD DENR publishes an integrated report (305b report / 303d list) every two years to document the State's progress in meeting and maintaining CWA goals. The 305b report is a report that discusses the condition of all of the State's water resources, whereas the 303d list is the list of impaired waters. SD DENR uses the report to plan and prioritize water impairment control activities in partnership with the Nonpoint Source Task Force.

Table 1 contains a summary of SD DENR's assessment and implementation efforts throughout the State in 2006 and 2012. Progress from watershed assessment through best management practice (BMP) implementation and completion can be identified in many watersheds throughout the State by comparing the summaries of the 2006 and 2012 Integrated Reports. Figure 1 displays an example of a successful bank stabilization effort that took place as part of the Big Sioux River Stability Project completed by East Dakota Water Development District and other partners.

Figure 1. Before and after pictures of a bank stabilization effort along the Big Sioux River near Sioux Falls (EDWDD 2012<sup>4</sup>).



4. East Dakota Water Development District (EDWDD). 2012. Big Sioux River Photos. [www.eastdakota.org](http://www.eastdakota.org). Accessed on June 28, 2012.

**Table 1. SD DENR Assessment and Implementation Schedules from 2006 and 2012 Integrated Report.**

Watershed	Year	Status
Bad River Basin	2006	No current watershed assessment or implementation.
	2012	No current watershed assessment or implementation.
Belle Fourche River Basin	2006	The Belle Fourche River implementation project is ongoing.
	2012	An implementation project is ongoing to address water quality of the Belle Fourche River and tributaries.
Big Sioux River Basin	2006	Watershed management programs attempted to reduce sediment and nutrient loads from both manmade and natural sources within the basin. Ongoing watershed implementation projects include Blue Dog Lake, Lake Poinsett, and the central and upper Big Sioux River. Watershed assessment projects underway include the north central and lower Big Sioux River, Lake Norden, Lake Albert, Lake St. John, and the Marshall and Deuel County lakes.
	2012	Watershed management programs attempted to reduce bacteria, sediment, and nutrient loads from manmade and natural sources (Figure 2). Ongoing watershed implementation projects include Lake Poinsett and the upper, north central, central, and lower Big Sioux River.
Cheyenne River	2006	Rapid City continued to implement restoration activities as part of a sediment removal project. These efforts will improve the trophic state of Canyon Lake. Assessment projects include the upper and lower Cheyenne River, Spring Creek, upper and lower Rapid Creek, and the lakes located within Custer State Park.
	2012	The Lower Cheyenne River Assessment project and the French Creek Assessment project were both completed. The Spring Creek Implementation Project is the only current implementation project being conducted in the Cheyenne River basin.
Grand River	2006	There are ongoing assessment or implementation projects occurring within the basin.
	2012	There are no ongoing assessment or implementation projects occurring within the basin.
James River Basin	2006	Current assessment projects included Wilmarth Lake, Twin Lakes, Richmond Lake, Amsden Dam, and the Lower James River. Ongoing implementation projects included Lake Hanson, Lake Faulkton, Cottonwood and Louise Lakes, Elm Lake, and Lake Mitchell, and Firesteel Creek.
	2012	The Upper James River Assessment Project was completed in 2011. Implementation projects included the Lower James basin and Brown County, which encompasses watersheds of Richmond Lake, Elm Lake-Elm River, Moccasin Creek, Willow Reservoir, and the Maple River. Implementation efforts pertaining to Lake Mitchell and Firesteel Creek are conducted under the Lower James Basin project.
Little Missouri River Basin	2006	There were no ongoing assessment or implementation projects occurring within the basin.
	2012	There are currently no watershed assessment or implementation projects in the basin.





Watershed	Year	Status
Minnesota River Basin	2006	Lake Traverse was the only ongoing assessment project. Implementation projects included Big Stone Lake, Fish Lake, and Lake Alice.
	2012	The Upper Minnesota River Watershed Water Quality Assessment project, which included the Whetstone and Yellowbank River watersheds, was completed in fall 2011. This investigation resulted in E. coli listings for the South Fork Whetstone River, North Fork Yellowbank River, and South Fork Yellowbank River. An Implementation project for the Upper Minnesota River basin in Grant and Roberts counties is planned for the summer of 2012. This project was included as part of the Northeast Glacial Lakes Project that currently encompasses Day and Marshall counties.
Missouri River Basin (Mainstem)	2006	Assessments in the Missouri River Basin included projects for the South Central lakes (including Academy, Dante, Geddes, Andes, and Platte), Burke Lake, Okobojo Creek, and Spring Creek watersheds. Ongoing implementation projects were located in the Medicine Creek and Lewis and Clark watersheds.
	2012	There are currently no active assessment projects in the Missouri River basin. The only active implementation project is in the Lewis and Clark watershed.
Moreau River Basin	2006	There were no assessment or implementation projects occurring within the basin.
	2012	There are no assessment or implementation projects occurring within the Moreau basin.
Niobrara River Basin	2006	An ongoing assessment project was conducted for Rahn Dam (Lewis and Clark assessment). There were no implementation projects occurring within the basin.
	2012	A portion of the Lewis and Clark Project (Missouri River Basin) is located in the Niobrara basin and is in the implementation phase.
Red River Basin	2006	A lake assessment has been completed for White Lake Dam and a TMDL was being written. An assessment of Lake Traverse and its watershed began.
	2012	There are currently no ongoing assessment or implementation projects occurring within the Red River basin.
Vermillion River Basin	2006	The Vermillion River watershed was assessed and ongoing implementation projects included the Turkey Ridge Creek and Kingsbury Lakes (which includes Lakes Preston, Thompson, Whitewood, and Henry) watersheds.
	2012	Ongoing implementation projects in the Vermillion River basin included the Vermillion River watershed and Turkey Ridge Creek watershed.
White River Basin	2006	Ongoing assessment projects include the White River, Cottonwood Creek, and Little White River watersheds.
	2012	Assessment projects have been completed for the White River, Little White River, and Cottonwood Creek watersheds. There are currently no ongoing implementation projects in the White River basin.

SD DENR 2006<sup>5</sup> and SD DENR 2012a<sup>6</sup>.

5. SD DENR. 2006. South Dakota Integrated Report for Surface Water Quality Assessment.  
 6. SD DENR. 2012. South Dakota Integrated Report for Surface Water Quality Assessment.





### *Point Source Pollution Control Program (SD DENR)*

The U.S. Environmental Protection Agency (EPA) delegated enforcement authority of the federal National Pollutant Discharge Elimination System (NPDES) program to the State on December 30, 1993. NPDES permits issued by the State are referred to as surface water discharge (SWD) permits. As of September 2011, 273 SWD permits had been issued.

In 2003, EPA issued revised regulations for Concentrated Animal Feeding Operations (CAFOs). South Dakota became the first state to adopt these regulations. In South Dakota, CAFOs are regulated by a water pollution control permit. Producers planning to build confined livestock operations are mandated to submit waste management plans that meet design requirements of SD DENR and are approved by a licensed professional engineer working under the authority of SD DENR.

### *Nonpoint Source Pollution (NPS) Control Program (SD DENR)*

SD DENR maintains a Watershed Protection Program that monitors all of the State's surface water resources in 4 year rotations and reports the condition of all water resources and a list of impaired waters to EPA in an integrated report. SD DENR NPS Control Program primarily uses voluntary measures involving various BMPs to mitigate NPS. These BMPs are implemented through conservation plans developed in partnerships between landowners and local sponsors. SD DENR provides financial and technical assistance for these plans through program staff and partnerships with sponsors including conservation districts and water development districts. Funding for conservation efforts is partially made available from annual funds SD DENR receives from the EPA under the Section 319 Nonpoint Source Funding Program. This program provides approximately \$2.3 million annually to fund conservation efforts. Local sponsors are responsible for the 40% non-federal match when projects are delegated Section 319 funds.

SD DENR developed a Nonpoint Source Task Force in 1988. The task force is currently composed of 23 agencies and interest groups and performs the following:

- Provides a forum for the exchange of information on activities that impact NPS control;
- Prioritizes waterbodies for NPS control activities;
- Provides guidance and application procedures for funding NPS control projects;
- Reviews project applications;
- Recommends projects to the South Dakota Board of Water and Natural Resources for funding approval;
- Serves as the coordinating body for the review and direction of federal, state, and local government programs to ensure that the programs will achieve NPS pollution control efficiently;
- Serves as a focal point for information, education, and public awareness regarding NPS pollution control;
- Provides oversight of NPS control activities and prioritize the activities; and
- Provides a forum for discussion and resolution of program conflicts.





## Groundwater

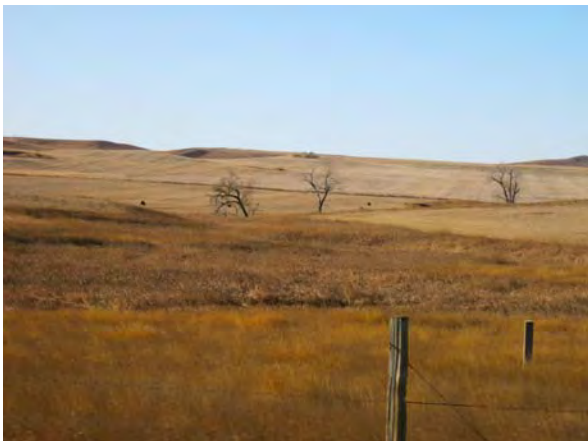
SD DENR coordinates an effort to protect areas surrounding public drinking water supplies. A source water assessment was completed within each of the approximately 760 public water supply systems within South Dakota following the 1996 Safe Drinking Water Act Amendment (SD DENR 1999<sup>7</sup>). Currently, local governments and water providers are responsible for addressing the risks identified in the assessment. Section 319 funds can be used to assess major aquifers in the State and promote and implement practices that prevent ground water contamination within these aquifers.

## Wetlands

Eastern South Dakota contains 1,780,859 acres of freshwater palustrine wetlands (Johnson and Higgins 1997<sup>8</sup>). The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) is the lead agency responsible for certified wetland determinations on agricultural lands. Producers must certify they have not manipulated wetlands in any ways that allow for crop production to occur in wetland areas in order to remain eligible for USDA farm program benefits under the 2008 Farm Bill legislation.

## Soil Resources

NRCS and the Farm Service Agency (FSA) administer Farm Bill programs that assist agricultural producers in improving South Dakota's crop, range, and pasture lands. Many programs are available to producers to improve the cost effectiveness of their operations while protecting natural resources. For example, the Environmental Quality Incentives Program (EQIP) improves the cost effectiveness of producer operations by providing cost-share programs for installation of water pipelines, off-stream water sources, cross fencing, and other practices. These programs are well utilized and are effective in reducing the time that cattle spend in riparian area and improve grazing distribution (Scheffield et al. 1997<sup>9</sup>). EQIP also provides conservation incentives for row crop agriculture BMPs, including addition of a perennial grass, legume, or cover crop to an existing rotation. Cost-sharing for critical area plantings, filter strips, and grassed waterways are also incentives to limit erosion and improve soil health. Local conservation districts utilize Coordinated Natural Resources Grant Funds and other funds from state and federal partners to provide producers cost-share opportunities to implement practices that promote soil conservation.



7. SD DENR. 1999. Source Water Assessment and Protection Program.

8. Johnson R.R. and K.F. Higgins. 1997. Wetland resources of eastern South Dakota. South Dakota State University. Brookings, SD. 102 pp.



## Air Quality

SD DENR monitors the State's air quality as required by the Clean Air Act of 1970 (CAA) for particulate matter (13 sites), ozone (5 sites), sulfur dioxide (5 sites), nitrogen dioxide (5 sites), and carbon monoxide (2 sites) (SD DENR 2011<sup>10</sup>). Air quality is monitored at locations where a pollutant of concern is expected to be the greatest. Rapid City occasionally experiences poor air quality due to particulate matter concentrations resulting from dry and windy conditions. In cooperation with Rapid City, Pennington County, and local industry, SD DENR is implementing a Natural Events Action Plan for the Rapid City area. This plan includes alerting the public on the potential of high dust levels when the following conditions occur:

- Hourly wind speeds exceed 20 miles per hour;
- Peak wind gusts are greater than 40 miles per hour; and
- Five consecutive days of 0.02 inch or less of precipitation each day, excluding dry snow.

During 2010, the public was notified of high wind dust alerts seven times, although none of those days exceeded the particulate matter (PM<sub>10</sub>) 24-hour standard. In summary, South Dakota maintains air quality better than the National Ambient Air Quality Standards established in the CAA for all measured criteria.

## Recreation and Wildlife

Recreation areas are managed at various levels: federal, state, tribal, municipal, county, institutional, and private. South Dakota Department of Game, Fish, and Parks (SD GFP) manages game and fish populations of the State along with issuing resident and nonresident hunting and fishing licenses. SD GFP also manages cost-share programs to help private landowners create and manage wildlife habitat on private lands, including dense nesting cover establishment, warm season native grass/forb establishment, woody habitat establishment, food habitat plots, wetland creation and restoration, grassland management, and restoration and habitat fencing.



## Conservation Programs

South Dakota utilizes a number of programs to address natural resource concerns and to provide opportunities for land owners and agencies to work together to manage landscapes. Table 2 contains examples of commonly used programs and the corresponding agencies responsible.

9. Scheffield, R.E., S. Mostaghimi, D.H. Vaughn, E.R. Collins Jr., and V.G. Allen. 1997. Off-stream water sources for grazing cattle as a stream bank stabilization and water quality best management practice. *Transactions of the American Society of Agricultural Engineers* 40: 595-604.
10. SD DENR. 2011. South Dakota ambient air monitoring annual network plan 2011.



**Table 2. Examples of commonly used conservation programs in South Dakota.**

Program	Agency
Emergency Watershed Protection Program Floodplain Easements (EWPP-FPE)	NRCS - USDA
Emergency Watershed Protection Program (EWPP)	NRCS - USDA
Wetlands Reserve Program (WRP)	NRCS – USDA
Grassland Reserve Program (GRP)	NRCS - USDA
Conservation Reserve Program (CRP)	FSA - USDA
Cooperative Conservation Partnership Initiative Grants	NRCS - USDA
Environmental Quality Incentives Program (EQIP)	NRCS - USDA
Conservation Stewardship Program (CSP)	NRCS - USDA
Wildlife Habitat Incentives Program (WHIP)	NRCS - USDA
Farm and Ranch Lands Protection Program (FRLPP)	NRCS - USDA
Forest Legacy Program	U.S. Forest Service (USFS) – USDA
Stewardship end results contracting	USFS - USDA
Private Stewardship Grants Program	USFWS
Landowner Incentive Program	USFWS
Partners for Fish and Wildlife	USFWS
Clean Water Act Section 319	EPA and SD DENR
Coordinated Natural Resources Conservation Grant Fund	State Conservation Commission and Conservation Districts
Wildlife Partnership Program	SD GFP
Emergency Conservation Program (ECP)	FSA-USDA

### Chapter 3: Past and Present Conditions

Natural resource conservation can be performed through a variety of programs and practices. Each program or practice may target a specific resource topic (water quality, water quantity, soil erosion, riparian areas); however, all are interrelated to a certain extent. Documenting trends in the status of South Dakota’s natural resources condition over time provides an evaluation of the effectiveness of past conservation efforts. This summary presents the trend of South Dakota’s natural resources condition and may be used to identify top conservation needs.

#### Water Resources

Surface water quality is continuously monitored, and efforts are being made to meet the beneficial use standards in all waters within the State. Between 2000 and 2005, 81 percent of South Dakota’s 9,289 miles of perennial rivers and streams were assessed and 50 percent fully supported their beneficial uses (SD DENR 2006<sup>5</sup>). In comparison, from 2006 to 2011, 69 percent of perennial rivers and streams were assessed and 35 percent fully supported all beneficial uses (SD DENR 2012a<sup>6</sup>).

Lake reservoir assessment of 24 percent of the State’s 573 lakes indicated that 39 percent of lakes and reservoirs (41 percent lake acreage) fully supported their beneficial uses from 2000 to 2005. Assessments between 2006 and 2011 indicated 52 percent of lakes and reservoirs (66 percent lake acreage) fully supported their beneficial uses. Figure 2 presents the location and status of meeting beneficial uses for all monitored water resources of the state as reported in the SD DENR integrated reports of 2006 and 2012.





Figure 2. South Dakota waterbody status as reported in SD DENR integrated reports (SD DENR 2006<sup>5</sup>, SD DENR 2012a<sup>6</sup>).

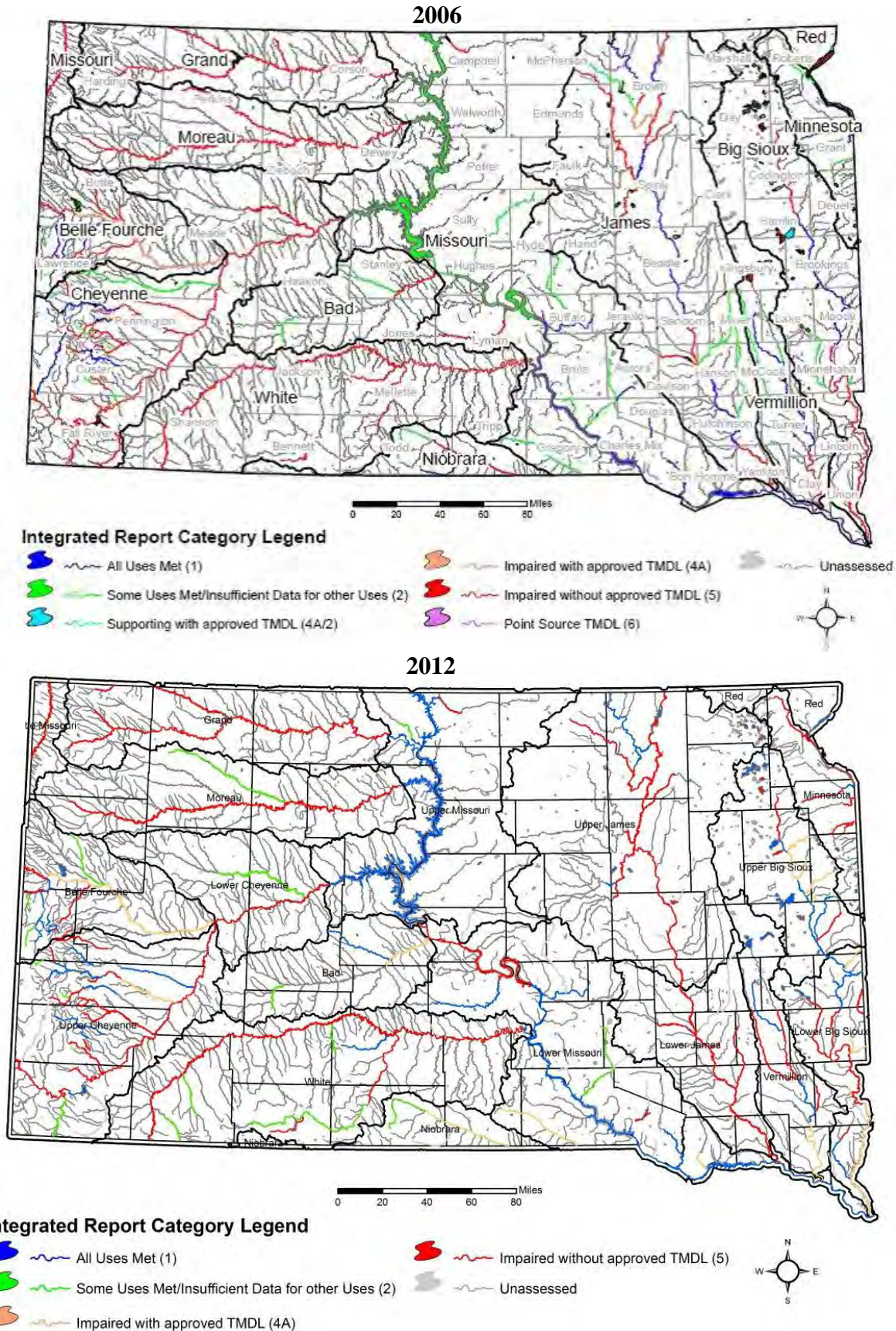




Figure 3 presents the percentage of perennial stream miles and lake/reservoir area in compliance with their designated beneficial use reported in the 2006 and 2012 integrated reports.

TMDL is a term in the CWA defined as a calculation of the maximum pollutant input that a waterbody can receive and still maintain water quality standards. TMDLs are calculated for waterbodies exceeding pollutant levels so that reduction levels can be identified and appropriate BMPs implemented. The number of waterbodies requiring a TMDL calculation has increased from 147 to 155 from 2006 to 2012. The increase in TMDL requirements is due to increasing fecal coliform violations within the James River Basin (SD DENR 2012a<sup>6</sup>). The spatial distribution of water quality violations has also changed between 2006 and 2012 (Figure 4). Notable reductions in TMDLs required have decreased in the Big Sioux, Cheyenne, and the Missouri River Basin whereas notable increases in TMDLs required have occurred in the James and Minnesota River Basins (Figure 4).

Figure 3. Percentage of perennial stream miles and lake and reservoir area meeting the standards for their designated beneficial use as reported by SD DENR in 2006 and 2012 integrated reports (SD DENR 2006<sup>5</sup>, SD DENR 2012a<sup>6</sup>).

Note: Due to changes in criteria, number assessed, insufficient data, etc., a balanced comparison can not be made between one Integrated Reporting period (2006) to another (2012). For example in 2010 EPA no longer accepted narrative criteria for listing lakes as impaired. This resulted in a number of lakes coming off the 2012 impaired list, which in part resulted in the higher number of lakes meeting their uses in 2012.

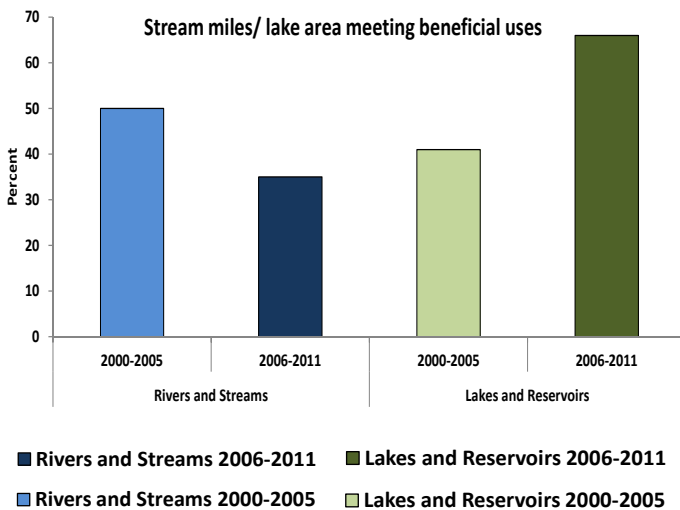
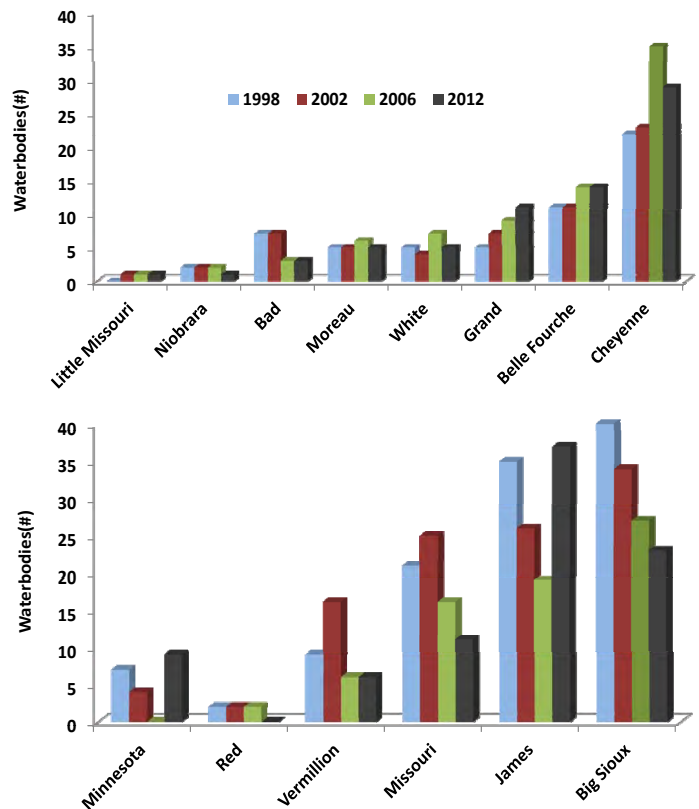


Figure 4. Number of waterbodies requiring a TMDL by South Dakota major river basins. West and east river basins are indicated in the upper and lower graphs, respectively.







Causes of impairments in South Dakota have remained relatively unchanged over the past 8 years, with suspended solids and fecal coliform being the leading causes of impairment. Suspended solids have regressed slightly since 2004, while fecal coliform impairments have increased, nearly surpassing suspended solids (Figure 5). Fecal coliform sources include wildlife, humans, grazing lands, and feedlot runoff. Fecal coliform impairments can be addressed by designing animal waste management systems and installing riparian buffers to decrease cattle access to streams. Section 319 funds are administered by SD DENR to implement these BMPs and are complemented by other forms of financial assistance, including:

- the South Dakota Coordinated Natural Resources Conservation Fund Grant Program;
- the South Dakota Clean Water Consolidated Water Facilities Construction Program;
- the South Dakota State Revolving Fund NPS Incentive Rate Loans;
- the SD GFP Private Lands Programs;
- the USDA Farm Bill Programs;
- the U.S. Fish and Wildlife Service (USFWS) Private Lands Programs;
- the Organizations such as lake associations, Ducks Unlimited, and Pheasants Forever; and
- the Landowners and managers.

### Soil Resources

National Resources Inventory (NRI) is a scientifically based program that currently provides nationally consistent data for the 25-year period of 1982 to 2007. It reports both national and state-level estimates for themes including land cover/use, land capability class, soil erosion, land use, wetlands, and development of non-federal rural land. It provides excellent information when evaluating soil resource conditions.

Erosion rates on South Dakota’s cultivated agricultural lands have decreased steadily from 1982 to 1997 due to implementation of better tillage practices and elimination of highly erodible land from crop production. Erosion rates stabilized the following decade from 1997 to 2007 (Figure 6) (USDA 2009<sup>11</sup>). Allocation of South Dakota agricultural lands within cropland, rangeland, and pastureland has changed little between 1982 and 2007.

Figure 5. Top seven causes for impairments in South Dakota’s rivers and streams in 2004, 2006, and 2012.

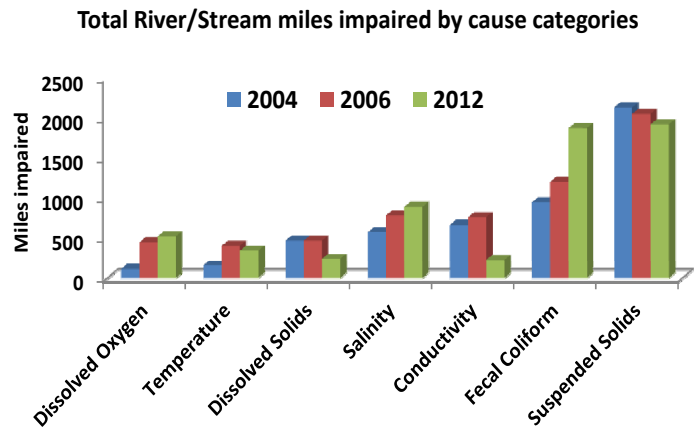
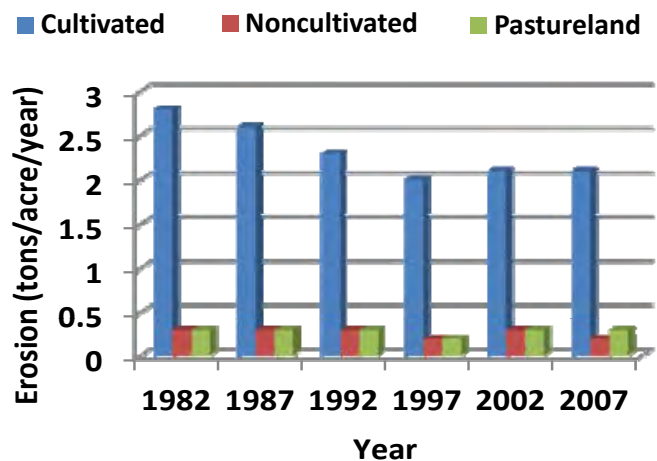


Figure 6. Erosion rates on South Dakota agricultural lands from 1982 to 2007 (USDA 2009<sup>11</sup>).



11. USDA. 2009. Summary Report: 2007 National Resources Inventory, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa. 123 pages. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1041379.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1041379.pdf). Accessed on October 31, 2012.



In contrast, Conservation Reserve Program (CRP) acres peaked in 1992 at 1,756,000 acres and decreased to 1,342,000 acres by 2007, followed by a loss to 1,159,971 acres by 2011 (Figure 7) (USDA 2012a<sup>12</sup>). The loss of CRP acres can be attributed to increases in commodity prices making CRP payments less competitive.

### Air Quality

South Dakota maintains air quality better than the national standards for all measured criteria at monitored locations and has no areas noncompliant with current standards (SD DENR 2011<sup>10</sup>).

### Recreation and Wildlife

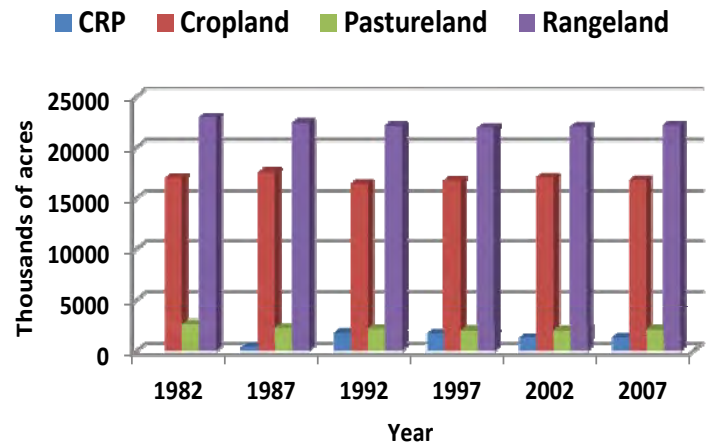
South Dakota contains unique landscapes due to the wide range of climate, geology, and landforms along with various disturbance regimes (grazing and fire) resulting in diverse habitats. Landforms include the Prairie Coteau, Great Plains, Badlands, and Black Hills containing tallgrass prairie/wetland complexes, mixed grass prairie/shrub, and forests (Figure 8).

Naugle determined that waterfowl and many other bird species in the Prairie Pothole Region of eastern South Dakota rely on complexes rather than a single isolated wetland (Naugle 2001<sup>13</sup>). Therefore, conservation programs designed to preserve clusters of wetlands including seasonal, semi-permanent, and permanent wetlands would achieve the best outcome for wetland dependant species. As a result, significant state and federal wildlife restoration and protection habitat efforts focus on wetland and adjacent upland habitat management.

The USFWS owns several hundred Waterfowl Production Areas (WPAs) totaling nearly 162,000 acres of uplands and wetlands in South Dakota (USFWS 2011<sup>14</sup>). WPAs are open to the public for a wide range of recreational uses including hunting, fishing and bird watching. In addition, the USFWS has partnered with private landowners to purchase voluntary conservation easements on approximately 800,000 upland acres and 525,000 wetland acres (USFWS 2011<sup>14</sup>). These easements are designed to complement working farms and ranches and accommodate a wide range of uses such as grazing of grasslands and farming of wetlands when they are dry from natural conditions.

NRCS currently maintains 114,046 easement acres for 30-year, 99-year, and permanent easements in the following programs: Emergency Watershed Protection Program Floodplain Easements (EWPP-FPE), Emergency Watershed Protection Program (EWPP), Wetlands Reserve Program (WRP), and Grassland Reserve Program (GRP) (Figure 9) (USDA 2012b<sup>15</sup>). South Dakota Game Fish and Parks currently owns approximately 730 Game Production Areas, totaling more than 281,477 acres and contain both upland and wetland areas .

Figure 7. South Dakota agricultural land allocation between 1982 and 2007 in thousands of acres (USDA 2009<sup>11</sup>).



12. USDA. 2012a. CRP enrollment and Rental Payments by State, 1986-2011. [www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=rns-css](http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=rns-css). Accessed May 15, 2012.

13. Naugle, D.E. 2001. A landscape approach to conserving wetland bird habitat in the Prairie Pothole Region of eastern South Dakota. *Wetlands* 21:1-17

14. USFWS. 2011. Annual Lands Report Tables. [http://www.fws.gov/refuges/realty/archives/pdf/2011\\_Annual\\_Report\\_of\\_LandsDataTable.pdf](http://www.fws.gov/refuges/realty/archives/pdf/2011_Annual_Report_of_LandsDataTable.pdf). Accessed on September 18, 2012.

15. USDA. 2012b. National Geospatial Management Center. <http://datagateway.nrcs.usda.gov/GDGOrder.aspx?order=QuickState>. Accessed on August 8, 2012.





Figure 8. 2006 South Dakota Land Cover Data image (USDA 2012b<sup>15</sup>).

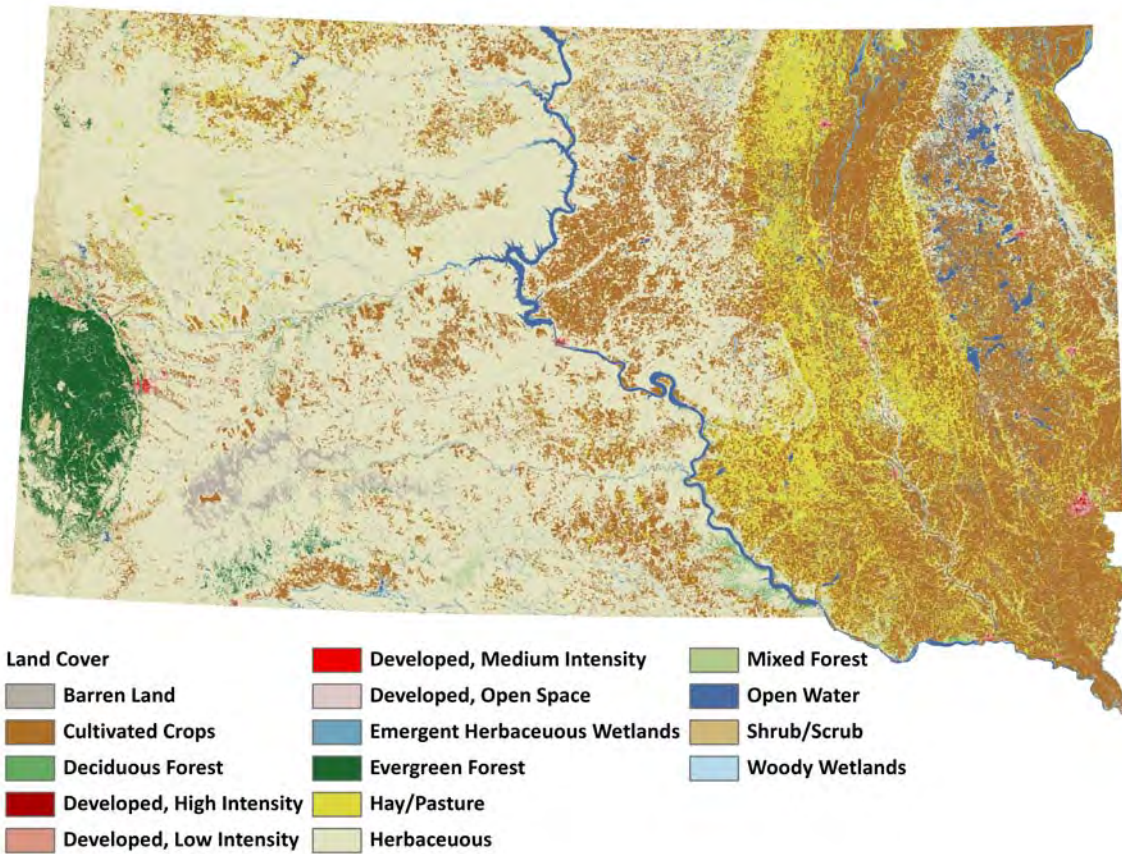
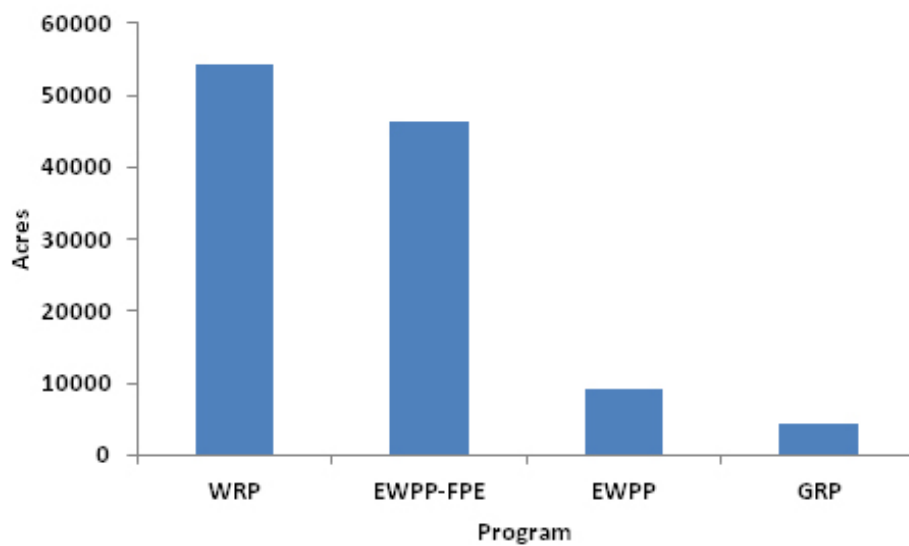


Figure 9. Land area currently in easements under NRCS programs (USDA 2012b<sup>15</sup>).





The Bureau of Land Management (BLM) manages over 274,000 acres of land within South Dakota. The majority of the land is mixed grass prairie or juniper woodlands in 13 counties west of the Missouri River. This land is managed for multiple uses including: livestock grazing, mineral extraction, forest management, and recreation.

The USFS manages over 2 million acres in the Black Hills and Custer National Forests and three national grassland units; Buffalo Gap, Fort Pierre, and Grand River. These lands are managed for grazing, multiple recreational uses, and forestry products. The USFS currently is addressing the mountain pine beetle epidemic by removing infested trees and diversifying tree species composition. Forested lands are home to deer, mountain goats, elk, and bighorn sheep. In addition to terrestrial species, trout are found in streams within the Black Hills and are an attraction to fly fisherman.

The South Dakota office of School and Public Lands manages over 750,000 acres of land. These lands are open to the public for hunting and fishing.

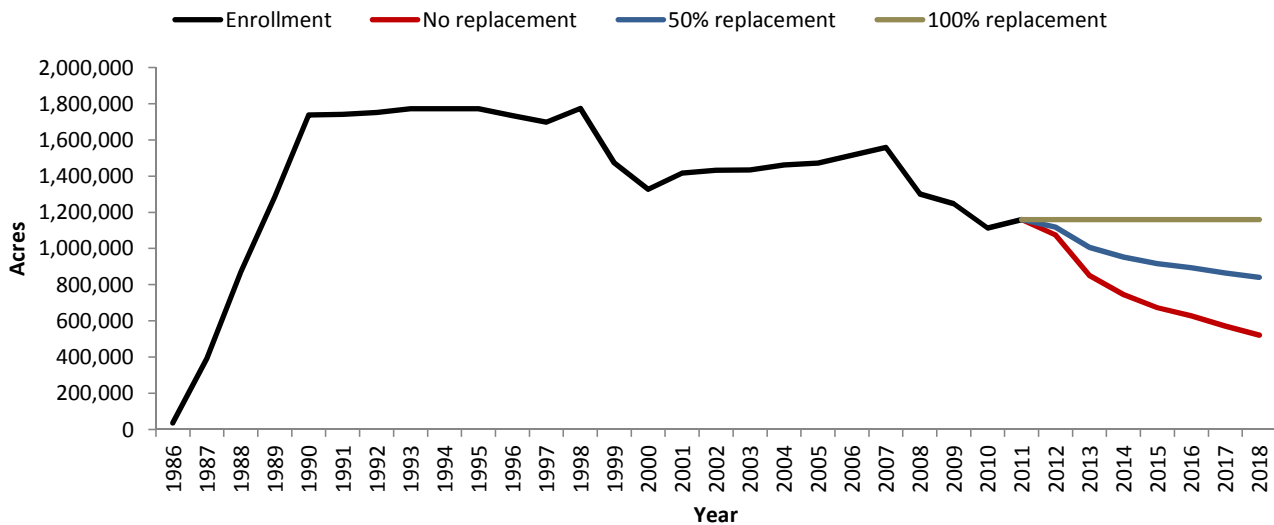
CRP was created in the 1985 Farm Bill as a national program that placed highly erodible and environmentally sensitive land into perennial vegetation. Landowners could voluntarily enroll land into CRP for 10- to 15-year contract periods.

Although CRP was originally viewed as a supply control program, it rapidly evolved into a program that provided many other environmental benefits. By 2008, the economic conditions drastically changed. Commodity prices nearly doubled between 2007 and 2008 and many producers calculated that converting CRP acres back into production would be a profitable option (USDA 2012<sup>16</sup>).

Since 2007, reenrollment rates in South Dakota have dipped below 50 percent. A 2007 survey conducted by SDSU determined 65 percent of CRP contracts were very likely or somewhat likely to be returned to agricultural production (Janssen et al. 2008<sup>17</sup>). Between 2007 and 2011, 714,234 CRP acres expired and a net loss of 399,060 CRP occurred, indicating reenrollment and new contracts replaced only 44 percent of expiring contracts over the 5-year period (FSA 2012a<sup>18</sup>).

Figure 10 displays CRP acres enrolled throughout the entirety of the CRP program and future projections through 2018.

Figure 10. Conservation Reserve Program from 1986 through 2011 and future projections based on acres set to expire through 2018.



16. USDA 2012. Economic Research Service. <http://www.ers.usda.gov/Data/PriceForecast>. Accessed on August 7, 2012.  
17. Janssen, L., N. Klein, G. Taylor, E. Opoku, and M. Holbeck. 2008. Conservation Reserve Program in South Dakota: Major findings from the 2007 survey of South Dakota CRP respondents. Economics Research Report-2008-1. South Dakota State University. Brookings, SD 57007.  
18. FSA. 2012a. FY 2012 data posted at [http://www.fsa.usda.gov/Internet/FSA\\_File/crpstatapr2012.pdf](http://www.fsa.usda.gov/Internet/FSA_File/crpstatapr2012.pdf). FY 2006-2011 data are from annual summaries posted at: <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=rns-css>. Accessed on June 15, 2012.



## Chapter 4: Goals and Results of 2007 Coordinated Plan

Adaptive management requires monitoring of successes and failures in order to improve the success of future conservation efforts. The value of monitoring conservation efforts is becoming more recognized as funding is limited with respect to the current conservation needs. South Dakota conservation organizations maintain records of conservation efforts in order to evaluate which practices are readily adapted by producers. Producer adaptability and estimated conservation value of BMPs are weighed against each other in order to develop a strategic plan to get the most conservation value per dollar. This chapter presents the goals and results of the 2007 Coordinated Plan for Natural Resources Conservation in the following categories: water, soil, air, recreation and wildlife, public awareness, and funding (Table 3). The ability to report the result of the goal was directly related to the monitoring initiatives.

**Table 3: Goals and Results of the 2007 Coordinated Plan for Natural Resources Conservation.**

Category	Goal	Objective	Result
Water	1	1A	Exceeded
		1B	Exceeded
	2	2A	Partially met
		2B	Exceeded
		2C	Unknown*
		2D	Partially met
		2E	Unknown*
Soils	3	2F	Unknown*
		2G	Unknown*
		3A	Unknown*
		3B	Unknown*
Air	4	3C	Unknown*
		3D	Partially met
		4A	Not met
Recreation and Wildlife	5	4B	Not met
		5A	Exceeded
		5B	Exceeded
		5C	Exceeded
Public Awareness	6	5D	Exceeded
		6A	Objective met
		6B	Partially met
		6C	Not met
		6D	Not met
Funding	7	6E	Exceeded
		7A	Not met
		7B	Exceeded
		7C	Exceeded

\*An unknown result was due to lack of information available to fully analyze the 2007 objectives.



## Water Resources

### Goal 1

All Missouri River watersheds in South Dakota will achieve their environmental, social, and economic values.

#### Objective 1A

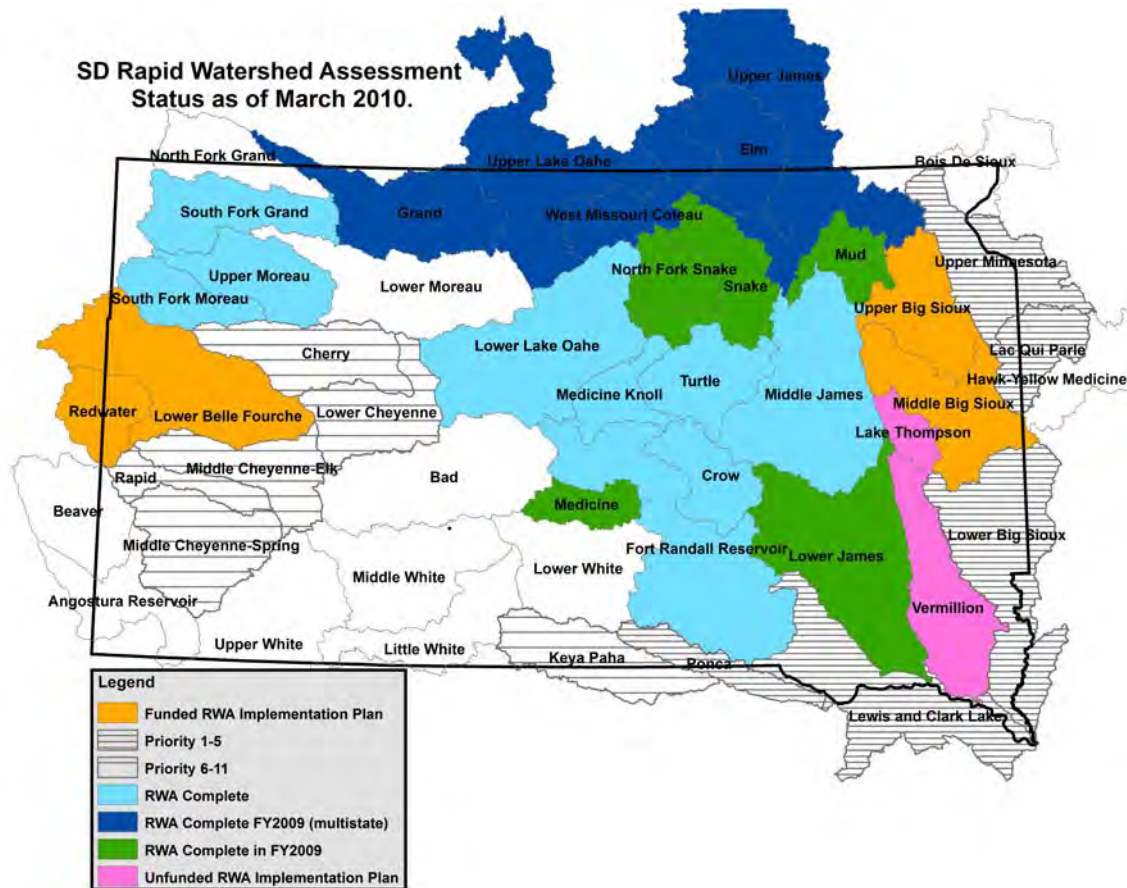
##### Objective

Complete strategic plans for the Missouri River and its watersheds that meet the approval of the cooperation agencies by 2012.

##### Result: Exceeded

- SD DENR is continually working on impaired streams within the watershed, which all flow into the Missouri River.
- SD DENR is currently working on/or planning to complete strategic plans for the following watershed projects: Central Big Sioux, Lower James River, Upper Minnesota River, Lewis and Clark (East River), Lower Big Sioux (SD DENR 2012b<sup>19</sup>).
- NRCS and partner agencies have initiated rapid watershed assessments (RWA) to help set conservation priorities within a watershed in a quick and economical manner. NRCS completed RWA for five Hydrologic Unit Code 8 (HUC8) Basins in 2009. RWA implementation plans have been funded for four HUC8 Basins, and eleven basins have been prioritized for future conservation efforts (Figure 11).

Figure 11. Status of rapid watershed assessments completed by NRCS (USDA 2009<sup>20</sup>).



19. SD DENR. 2012b. Pete Jahraus, personal communication. May 3, 2012.

20. USDA. 2009. South Dakota Rapid Watershed Assessment Status. [http://ftpfc.sc.egov.usda.gov/SD/www/Technical/RWA/hucmap\\_071009rwa\\_a.pdf](http://ftpfc.sc.egov.usda.gov/SD/www/Technical/RWA/hucmap_071009rwa_a.pdf). Accessed on August 3, 2012.





Since the 2007 plan, several programs have completed strategic plans. The following is a list of the programs as well as a description of each:

- *Missouri River Recovery Program*: U.S. Army Corps of Engineers (USACE) Program established and annually funded by Congress to work towards restoring some of the natural function of the Missouri River, especially with regard to endangered species, connectivity with the flood plain and among river reaches, etc. Annual funding is typically between \$70 and \$90 million. Projects such as emergent sandbar creation and construction of backwater areas are projects funded by this program (USACE 2012<sup>21</sup>).
- *Missouri River Futures*: This was an NRCS-led effort on the Missouri River Recreational River segments above Lewis and Clark Lake and below Gavins Point Dam (98 total river miles). The focus of this program is communicating with landowners about tools (easements, fee titles, sloughing easements, etc.) available to landowners along the Recreational River. The program is currently administered by the Missouri River Institute at the University of South Dakota in Vermillion, South Dakota (Missouri River Futures 2012<sup>22</sup>).
- *Missouri River Sedimentation Action Coalition*: A group actively soliciting the federal government to commit resources to addressing sedimentation and erosion impacts in South Dakota. The group has successfully lobbied for funding appropriations from the USDA, NRCS, and USGS studies of sedimentation sources, impacts, etc (Missouri River Sedimentation Action Coalition 2012<sup>23</sup>).
- *Title IX Sedimentation Task Force*: With Title IX of the 2000 Missouri River Restoration Act, congress authorized \$50 million to address sedimentation issues on the Missouri River in South Dakota. However, an assessment of sources and impacts must first be generated, then projects identified and designed before congressional delegates can request appropriations for specific projects. This effort is currently stalled as the State was unable to serve as the local sponsor for the assessment due to lack of funding available for the required match through in-kind methods. The State is investigating other ways to meet the required local match for the assessment and planning phases (Yankton Daily Press and Dakotan 2009<sup>24</sup>).
- *Niobrara Confluence and Ponca Bluffs – Land Protection*: This is a cooperative effort between the National Parks Service and the USFWS to improve conditions in the Missouri River’s channel migration zone between Fort Randall Dam and the Niobrara confluence and Gavins Point Dam and Sioux City. Land protection planning strategies include long-term lease, conservation easements, or purchase (USFWS 2012a<sup>25</sup>).



## Objective 1B

### Objective

Complete 20 TMDL assessments for critical waters that meet the approval of the cooperating agencies by 2012.

### Result: Objective Exceeded

- 32 TMDLs have been completed since 2010 (SD DENR 2012a<sup>6</sup>).

21. USACE. 2012. Missouri River Recovery Program. <http://www.moriverrecovery.org/mrrp/f?p=136:1:1223167892674901::NO>. Accessed on August 3, 2012.
22. Missouri River Futures. 2012. <http://www.missouririverfutures.com/>. Accessed on August 3, 2012.
23. Missouri Sedimentation Action Coalition. 2012. <http://www.msaonline.com/>. Accessed on August 3, 2012.
24. Yankton Daily Press and Dakotan. 2009. <http://www.yankton.net/articles/2009/04/03/news/doc49d59d2be31d7429937719.txt>. Accessed on August 27, 2012.
25. USFWS. 2012a. Niobrara Confluence and Ponca Bluffs: Land Protection Planning in Nebraska and South Dakota. [http://www.nps.gov/mnrr/upload/niobrara\\_ponca\\_factsheet\\_web\\_0112.pdf](http://www.nps.gov/mnrr/upload/niobrara_ponca_factsheet_web_0112.pdf). Accessed on August 3, 2012.



## Goal 2

All South Dakota waters will provide sufficient quantities of quality water to meet their beneficial uses.

### Objective 2A

#### Objective

Install 20 million linear feet of additional livestock water pipelines by 2012 based on yearly program accomplishment reports.

#### Result: Partially met

- 15,261,343 linear feet of pipeline installed

NRCS provided technical assistance for the installation of 15,002,334 linear feet of water pipeline (NRCS 2012b<sup>29</sup>). Additionally, USFWS installed 27,769 feet (USFWS 2012<sup>26</sup>) and the conservation districts collectively installed 231,240 linear feet of water pipeline under grants funded by the Coordinated Natural Resources Conservation Grant Fund (SDDA 2012<sup>27</sup>).

### Objective 2B

#### Objective

Install 60 animal nutrient management systems and nutrient management plans by 2012 based on yearly program accomplishment reports.

#### Result: Objective Exceeded

- 18 Nutrient Management Systems implemented by SD DENR and conservation districts.
- 111 Nutrient Management Plans implemented by conservation districts (SDDA 2012<sup>27</sup>).

NRCS provided the financial assistance to implement 63 nutrient management plans and 191 animal waste management systems through EQIP (NRCS 2012<sup>29</sup>). In addition, SD DENR cost-shared 17 nutrient management systems through EPA Section 319 funds from 2008 through 2011 and the conservation districts installed 1 Nutrient Management System. During the same time period, SD DENR also reviewed and approved 240 permit applications for Ag Waste Systems (SD DENR 2012<sup>28</sup>).



26. USFWS. 2012b. Kurt Forman, personal communication. June 1, 2012.

27. SDDA. 2012. Bill Smith, personal communication. June 1, 2012.

28. SD DENR. 2012c. Pete Jahraus, personal communication. April 20, 2012.

29. NRCS. 2012. Integrated Data for Enterprise Analysis (IDEA). October 17, 2012.



### Objective 2C

#### Objective

Install 200 miles of buffer strips by 2012 based on the yearly program accomplishment reports.

#### Result: Unknown

Notable accomplishments contributing towards this objective include:

- 386 riparian restoration and protection practices implemented by SD DENR using EPA Section 319 funding from 2008 through 2011 (SD DENR 2012c<sup>28</sup>).
- 30 grassed waterways implemented by SD DENR using EPA Section 319 funding from 2008 through 2011 (SD DENR 2012c<sup>28</sup>).
- 51 bank stabilization practices implemented by SD DENR using EPA Section 319 funding from 2008 through 2011 (SD DENR 2012c<sup>28</sup>).
- 26,812 acres of riparian restoration including the NW Area Cottonwood Project were implemented with NRCS technical assistance (NRCS 2012a<sup>29</sup>).
- 22,873 acres of buffers associated with CRP practices (CP 8A, 15, 21, 22, 24, 29, 30, 33). The amount is the difference between reported FY2006 and FY2012 (as of April 2012) CRP enrollments (FSAa 2012<sup>18</sup>).

### Objective 2D

#### Objective

Seal 400 abandoned wells by 2012 based on the yearly program accomplishment reports.

#### Result: Partially Met

- 93 abandoned wells sealed.

During this period NRCS provided financial assistance to seal 44 abandoned wells (NRCS 2012<sup>29</sup>) and the conservation districts sealed an additional 49 abandoned wells (SDDA 2012<sup>27</sup>).

### Objective 2E

#### Objective

Reduce sediment delivery to waterbodies by 8 million tons by 2012 based on 2002 NRCS data.

#### Result: Unknown

- At the time of writing this report, the NRCS-NRI 2012 report had not been published .
- Between 2002 and 2007 1.2 million fewer tons of sediment have eroded due to sheet/rill (0.7 million tons) and wind erosion (0.5 million tons) (NRCS 2009<sup>30</sup>).
- Total reductions for 2008 to 2011 reported by SD DENR were 216,553 tons from implemented BMPs between 2008-2011 (SD DENR 2012d<sup>31</sup>).

### Objective 2F, 2G

#### Objective

Reduce nitrogen delivery to waterbodies by 7,500 tons and phosphorus delivery by 1,400 tons by 2012 based on 2007 NRCS data.

#### Result: Unknown

- NRCS-NRI does not track this information.
- Total reductions for 2008 to 2011 reported by SD DENR include an estimated 680 tons (nitrogen) and 188 tons (phosphorus) from implemented BMPs (SD DENR 2012d<sup>31</sup>).

30. NRCS. 2009. 2007 National Resources Inventory. [http://soils.usda.gov/survey/rca/viewer/reports/nri\\_crop\\_sd.html](http://soils.usda.gov/survey/rca/viewer/reports/nri_crop_sd.html). Accessed August 13, 2012.

31. SD DENR. 2012d. Personal communication with Pete Jahraus during Advisory Committee Meeting. May 5, 2012.





## Soil Resources

### Goal 3

All lands in South Dakota will have quality soils appropriate to their capability.

#### Objective 3A

##### Objective

Reduce the total number of acres eroding at greater than “T” by 10 percent by 2012 based on 2002 NRI data.

##### Result: Unknown

- NRCS’ NRI data does not report these numbers by state. This information is only available at the national scale.

#### Objective 3B

##### Objective

Convert 250,000 acres of marginal cropland to permanent vegetative cover by 2012 based on 2002 NRI data.

##### Result: Unknown

- 16,836 acres of permanent vegetative cover planted with technical assistance provided through NRCS (NRCS 2012<sup>29</sup>) (NRI reports this information only at the national scale).
- 456,461 acres of new CRP plantings from 2007 to 2012 (FSA 2012b<sup>32</sup>).

#### Objective 3C

##### Objective

Improve 400,000 acres of poor and fair condition grassland one condition class by 2012 based on 2002 NRI data.

##### Result: Unknown

- NRCS determined condition classes in 2007; however, now assessment is based on “climax plant community.” Condition class was only reported at the national level and could not be obtained at the state level to evaluate this objective.

#### Objective 3D

##### Objective

Develop forest management plans on 20,000 acres by 2012 based on 2006 South Dakota Resource Conservation & Forestry (RC&F) data.

##### Result: Partially Met

- Forest management plans were developed on 14,324 acres (SDDA-RC&F 2012<sup>33</sup>).
- Other notable accomplishments include:
  - Conservation Districts cost-shared the thinning of 413 acres of forests from 2007 through 2012 using Coordinated Natural Resources Conservation Grant Funds (SDDA 2012<sup>27</sup>).
  - South Dakota Department of Agriculture (SDDA) developed a state-wide forest action plan in 2010 by geographically weighting 12 metrics to designate high, medium, and low priority state forest resources. This prioritizes areas where forest management plans should be developed (USDA-USFS and SDDA 2010<sup>34</sup>).
  - The 2011 Contribution Agreement between SDDA and NRCS facilitated collaboration to improve forest health and reduce wildfire risk on non-federal lands by providing funding for technical assistance to control the existing and prevent future mountain pine bark beetle infestations.

32. FSA. 2012b. Summary of active contracts by program year by state. CRP-Monthly Contracts Report. [https://arcticoccean.sc.egov.usda.gov/CRPReport/monthly\\_report.do?method=displayReport&report=July-2012-ActiveContractsSummaryByProgramYearNational-00](https://arcticoccean.sc.egov.usda.gov/CRPReport/monthly_report.do?method=displayReport&report=July-2012-ActiveContractsSummaryByProgramYearNational-00). Accessed on August 30, 2012.

33. SDDA – RC&F. 2012. Bill Smith, personal communication. May 31, 2012.

34. USDA-USFS and SDDA. 2010. South Dakota Statewide Assessment of Forest Resources. [http://sdda.sd.gov/legacydocs/Forestry/educational-information/PDF/rsi-2117-sd-forestry-assessment-safr\[2\].pdf](http://sdda.sd.gov/legacydocs/Forestry/educational-information/PDF/rsi-2117-sd-forestry-assessment-safr[2].pdf) Accessed on August 3, 2012.



## Air Quality

### Goal 4

All of South Dakota will meet air quality standards.

#### Objective 4A

##### Objective

Promote and increase practices that improve air quality by conducting seven training sessions for conservation districts on air quality issues and technology by 2012.

##### Result: Objective Not Met

- No training sessions were held.

#### Objective 4B

##### Objective

Increase the sequestration of carbon by developing a website that allows access to research and resources by 2012.

##### Result: Objective Not Met

- Air quality has not been a major issue within South Dakota; therefore, efforts to address this issue have been minimal.

## Recreation and Wildlife

### Goal 5

Enhance recreation opportunities and wildlife habitats.

#### Objective 5A

##### Objective

Improve wildlife habitat by installing 16,000 acres of herbaceous cover by 2012 based on yearly program accomplishments.

##### Result: Exceeded

- 119,479 acres of herbaceous cover installed.

The number reported is the result of the following efforts:

- 66,310 acres enrolled in State Acres for Wildlife Enhancement (SAFE) Conservation Reserve Program between 2006 and 2008 (FSA 2012a<sup>18</sup>).
- 737 acres enrolled in herbaceous nesting cover for wildlife through the Wildlife Habitat Incentives Program (WHIP) (NRCS 2012<sup>29</sup>).
- 52,076 acres being managed as perennial vegetation cover through EQIP (USDA NRCS<sup>12</sup>).
- 165 acres of herbaceous cover and 191 acres of other wildlife habitat installed (SDDA 2012<sup>27</sup>).

The goal has technically been achieved; however, CRP enrollment has decreased by 484,076 acres (31 percent) from 2007 through 2011, and an additional 224,595 acres are set to expire in September of 2012 (FSA 2012c<sup>35</sup>). The SAFE program was initiated in 2008 as an additional conservation practice under CRP; hence, the 66,000 acres were all enrolled since 2007.

Janssen and others conducted a survey in 2007 and found that 60.7 percent of CRP acres are projected to return to crop production (Janssen et al. 2008<sup>36</sup>). Rates varied from 45.5 percent in Western regions; 60.1 percent in the East-central, Southeast Central, and Central regions; and 71.8 percent in the North Central and Northeast region). See projected CRP enrollment for low, medium, and high reenrollment rates in Figure 10.

35. FSA. 2012c. CRP Contract Expirations by State, 2012-2018. <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=rns-css>. Accessed August 3, 2012.

36. Janssen, Dr. Larry; Dr. Nicole Klein, Dr. Gary Taylor, Mr. Emmanuel Opoku, and Mr. Michael Holbeck. Conservation Reserve Program in South Dakota: Major Findings from 2007 Survey of South Dakota CRP Respondents. SDSU Economics Research Report 2008-1. July 2008.



### Objective 5B

#### Objective

Create or restore 12,000 acres of wetlands by 2012 based on 2002 NRCS/NRI data.

#### Result: Objective Exceeded

- 41,722 acres of wetland restored enrolled in WRP between 2007 and 2012 (NRCS 2012<sup>29</sup>).
- Wetland related CRP practices (CP 9, 23, 23A, 27, 28, 37, 38, and 41) experienced a net increase of 35,816 acres between September 2006 and April 2012 (FSA 2012a<sup>18</sup>).

Reported CRP-related practices include CP 37 (duck nesting habitat), which can be up to 10:1 upland wetland ratios. CP 41 (flooded prairie potholes) and CP 37+38 (farmable wetlands) and CP 41 (Flooded Prairie Wetlands) were also considered restored wetlands.

### Objective 5C

#### Objective

Restore 4,000 acres of riparian areas by 2012 based on 2002 NRCS/NRI data.

#### Result: Objective Exceeded

- 9,351 acres underwent riparian restoration, including the Northwest Area Cottonwood Project and WHIP (NRCS 2012<sup>29</sup>).

### Objective 5D

#### Objective

Renovate 50 shelterbelts by 2012 based on yearly program accomplishments.

#### Result: Objective Exceeded

- 456 shelterbelts/windbreaks renovated.

NRCS renovated 428 windbreaks/shelterbelts (1,920 acres) and established 9,749,547 feet of windbreaks/shelterbelts (25,068 acres) (NRCS 2012<sup>29</sup>). In addition, the conservation districts renovated 28 shelterbelts (SDDA 2012<sup>27</sup>).







## Public Awareness

### Goal 6

Every South Dakota citizen will have an awareness and understanding of the benefits of natural resource management.

#### Objective 6A

##### Objective

Increase public awareness of conservation by implementing a media campaign by 2012.

##### Result: Objective Met

- [www.sdconservation.org](http://www.sdconservation.org) provides links to district websites and resource management issues.

#### Objective 6B

##### Objective

Increase public awareness of conservation districts by developing 40 district websites by 2012 based on the number of district websites in 2006.

##### Result: Partially Met

- Approximately eight Conservation District websites were developed (SDACD 2012<sup>37</sup>).

#### Objective 6C

##### Objective

Establish a conservation project in 200 5th grade classes by 2012 based on the number of programs in 2006.

##### Result: Objective Not Met

- We are not aware of any new programs that were developed.

#### Objective 6D

##### Objective

Establish an Envirothon program in 20 high schools by 2012.

##### Result: Objective Not Met

- An effort is being made to coordinate a pilot team to compete out of state (Yvette Kirkman 2012<sup>38</sup>).

#### Objective 6E

##### Objective

Develop a web-based resource that addresses natural resource management issues by 2012.

##### Result: Objective Not Met

- Links to natural resource management issues are available through [www.sdconservation.org](http://www.sdconservation.org).

37. SDACD. 2012. [www.sdconservation.org](http://www.sdconservation.org). Accessed on July 11, 2012.

38. Yvette Kirkman. 2012. Conservation District Manager – Belle Fourche, SD, personal communication. June 4, 2012.



## Funding

### Goal 7

Secure stable funding and financial opportunities for natural resource management.

#### Objective 7A

##### Objective

Each conservation district will increase its supplemental funding by one additional source by 2012 based on the districts' 2000 annual reports.

##### Result: Objective Not Met

- No additional funding sources were reported in the annual accomplishment reports received from conservation districts.

#### Objective 7B

##### Objective

Obtain funding for 14 conservation technicians by 2012 on the districts' 2006 staffing levels.

##### Result: Objective Exceeded

- 21 Conservation technicians employed (SDDA 2012<sup>27</sup>).

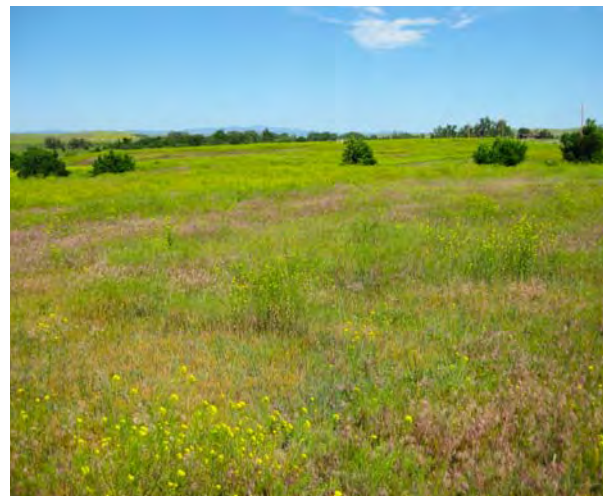
#### Objective 7C

##### Objective

Identify or create one additional funding source for shelterbelt renovation by 2012 based on the development of a new cost/share program.

##### Result: Exceeded

- SDDA was awarded EQIP funding through a Cooperative Conservation Partnership Initiative. To date, this funding has awarded \$1,105,651 to renovate 1,493 acres of shelterbelts.





## Chapter 5: Goals and Strategies for the Revised Conservation Plan

### Water Resources

#### Goal 1

Fifty percent of South Dakota waters will meet their beneficial uses.

#### Objective 1.1

##### Objective

Complete 10 TMDL assessments per year for impaired waters by 2019.

##### Performance Measure

SD DENR will report the number of TMDL assessments completed annually.

#### Objective 1.2

##### Objective

Develop nutrient management plans for 30,000 acres by 2019.

##### Performance Measure

NRCS will report annually how many acres have had nutrient management plans developed.

#### Objective 1.3

##### Objective

Permitted CAFOs will have an additional 210,000 acres in approved nutrient management plans by 2019.

##### Performance Measure

SD DENR will report annually the number of approved nutrient management plan acres.

#### Objective 1.4

##### Objective

Install 128,000 acres of non-forested riparian buffers and 30,000 acres of forested riparian buffers (total=158,000 acres) by 2019 based on the yearly program accomplishment reports.

##### Performance Measure

- a.FSA, NRCS, and conservation partners will annually report buffer strips implemented in acres.
- b.SD DENR will annually report buffer strips implemented in acres.

#### Objective 1.5

##### Objective

Seal 100 abandoned wells with a focus on large diameter and free flowing wells by 2019.

##### Performance Measure

- a.SD DENR will annually report the number of wells sealed.
- b.SDDA will annually report the number of wells sealed.





### Objective 1.6

#### Objective

Reduce sediment delivery to waterbodies by 70,000 tons/year through 2019.

#### Performance Measure

- a. SD DENR will annually report tons of sediment reduced due to EPA Section 319 efforts.
- b. NRCS will use 2007 and 2017 NRI data for average annual sheet and rill erosion for cropland (cultivated and non-cultivated) and pastureland.
  - 2007 Baseline: Cropland = 1.9 tons/acre \* 16,764,000 acres = 31,851,600 Tons
  - Pastureland/Rangeland = 0.03 tons/acre \* 24,279,000 acres = 728,376 Tons

### Objective 1.7

#### Objective

Reduce nitrogen delivery to waterbodies by 150 tons/year through 2019.

#### Performance Measure

SD DENR will annually report nitrogen reduced due to EPA Section 319 efforts.

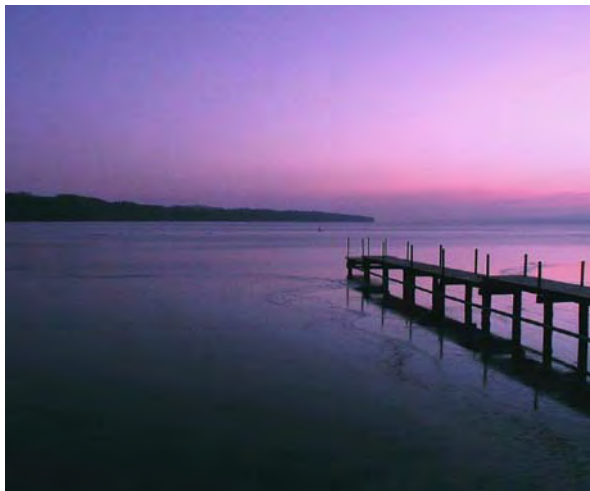
### Objective 1.8

#### Objective

Reduce phosphorus delivery to waterbodies by 50 tons/year through 2019.

#### Performance Measure

SD DENR will annually report phosphorus reduced due to EPA Section 319 efforts.





**Goal 2**

South Dakota waters will provide sufficient quantities of quality water.

**Objective 2.1**

**Objective**

Install 20 million linear feet of additional livestock water pipelines by 2019.

**Performance Measure**

- a. NRCS will annually report livestock water pipelines installed.
- b. SDDA will annually report livestock water pipelines installed.
- c. USFWS will report livestock water pipelines installed.

**Objective 2.2**

**Objective**

Convert 3,600 acres of flood irrigated lands to 60 pivot systems by 2019 to increase irrigation efficiency from 40% to 95%, thus saving volumes of water for other beneficial uses.

**Performance Measure**

NRCS and other conservation partnerships will report annually the number of acres of flood irrigated lands converted to pivot systems.

**Objective 2.3**

**Objective**

Repair, renovate, replace, or build 500 ponds and dams for stock water and wildlife by 2019.

**Performance Measure**

- a. SDDA will annually report the number of ponds or dams repaired, renovated, replaced or built.
- b. NRCS will annually report the number of ponds or dams repaired, renovated, replaced or built.
- c. USFWS will annually report the number of ponds or dams repaired, renovated, replaced or built.
- d. SD GFP annually report the number of ponds or dams repaired, renovated, replaced or built.
- e. SD DENR will annually report the number of ponds or dams repaired, renovated, replaced or built.





## Soil Resources

### Goal 3

South Dakota will have healthy soils appropriate to their capability.

#### Objective 3.1

##### Objective

Reduce cultivated cropland erosion to equal less than 2.0 tons/acre or total cropland erosion equal to less than 1.7 tons/acre by 2019.

##### Performance Measure

NRCS – NRI

- 2007 Baseline: 2.1 tons/acre (cultivated cropland).
- 2007 Baseline: 1.9 tons/acre (total cropland).

#### Objective 3.2

##### Objective

Convert 3,000 acres of cropland to perennial vegetative cover annually through 2019.

##### Performance Measure

- a. NRCS will report acres enrolled into conservation programs.
- b. FSA will report acres enrolled in CRP.

#### Objective 3.3

##### Objective

Improve grassland condition by installing 400,000 acres of grazing management systems by 2019.

##### Performance Measure

- a. SDDA will annually report acres of grazing management systems.
- b. NRCS will annually report acres of grazing management systems.
- c. USFWS will annually report acres of grazing management systems (Systems not utilizing Coordinated Natural Resources grants).
- d. SD GFP annually report acres of grazing management systems.
- e. SD DENR will annually report acres of grazing management systems.

#### Objective 3.4

##### Objective

Convert 25,000 acres of conventional tilled cropland to conservation tillage.

##### Performance Measure

NRCS will annually report acres transitioned from conventional tilled cropland to conservation tillage.





## Air Quality

### Goal 4

All of South Dakota will meet air quality standards.

#### Objective 4.1

##### Objective

Monitor/improve air quality and respond to issues annually through 2019.

##### Performance Measure

- a. SD DENR will report the State's air quality in Ambient Air Monitoring Annual Network Plans.
- b. SD DENR will reduce school bus emissions through the Clean Diesel Grant Program.
  - 2012 Baseline: Four school bus fleets have been replaced with clean diesel buses and 145 buses have been retrofitted with an oxidation catalyst device since the beginning of the program.

## Wildlife

### Goal 5

Enhance or establish fish and wildlife habitats.

#### Objective 5.1

##### Objective

Restore and maintain 158,000 acres of riparian buffers (with a combined total of forested and nonforested buffers) by 2019.

##### Performance Measure

- a. SD DENR will report riparian acres restored or maintained.
- b. SDDA will report riparian acres restored or maintained.
- c. NRCS will report riparian acres restored or maintained.
- d. FSA will report riparian acres restored or maintained.
  - 2012 Baseline: 474,837 riparian acres currently under riparian-related CRP practices (CP 8A, 9, 15, 21, 22, 23, 23A, 27, 28, 31, 37, 39, 40, 41, and 42)

#### Objective 5.2

##### Objective

Renovate 600 shelterbelts affecting 2,700 acres by 2019.

##### Performance Measure

- a. SDDA will annually report shelterbelts renovated .
- b. SD DENR will annually report shelterbelts renovated.
- c. FSA will annually report shelterbelts renovated.



**Objective 5.3**

**Objective**

Improve wildlife habitat by installing 400,000 acres of grazing management systems by 2019.

**Performance Measure**

- a.SDDA will annually report acres of grazing management systems.
- b.NRCS will annually report acres of grazing management systems.
- c.USFWS will annually report acres of grazing management systems.
- d.SD GFP will annually report acres of grazing management systems.
- e.SD DENR will annually report acres of grazing management systems.

**Objective 5.4**

**Objective**

Create or restore 77,000 acres of wetlands and associated upland areas by 2019.

**Performance Measure**

- a.SDDA will annually report created or restored acres of wetlands and associated upland areas.
- b.NRCS will annually report created or restored acres of wetlands and associated upland areas based Wetland Reserve Program enrollments.
- c.USFWS will annually report created or restored acres wetlands (not including upland area).
- d.SD GFP will annually report created or restored acres of wetlands and associated upland areas.

**Objective 5.5**

**Objective**

Convert 3,000 acres of cropland to perennial vegetative cover annually through 2019.

**Performance Measure**

- a.NRCS and partners will annually report acres planted to perennial vegetative cover.
- b.FSA will annually report acres enrolled into CRP.

**Public Awareness**

**Goal 6**

South Dakota citizens will have an awareness and understanding of the benefits of natural resources management.

**Objective 6.1**

**Objective**

Establish an Envirothon program in 5 high schools by 2019.

**Performance Measure**

SDACD will report Envirothon programs developed in their annual reports.

- 2012 Baseline: 0 Envirothon programs have been developed.



**Objective 6.2**

**Objective**

Utilize a partnership between Ag in the Classroom and the Conservation Districts to produce one activity in each district annually through 2019.

**Performance Measure**

Conservation districts will report educational activities annually.

**Objective 6.3**

**Objective**

Develop and conduct an annual survey to determine outreach materials (social media, websites, pamphlets, workshops, etc.) needed to expand conservation awareness in South Dakota citizens.

**Performance Measure**

SDDA and SDACD will report annually if an annual survey was developed and distributed.

**Objective 6.4**

**Objective**

Develop at least one new item of outreach material quarterly (social media, websites, pamphlets, workshops, iGROW etc.) based on the topic identified by the annual survey. The conservation partnership will work on rotation with SDSU extension to develop materials to be distributed in cooperation with iGROW, SDACD, and SDDA.

**Performance Measure**

SDDA and SDACD will report annually if outreach material was generated and distributed.

**Objective 6.5**

**Objective**

Through 2019, establish and maintain a list of events (such as county fairs, state fair, water festivals, home shows) attended by the conservation districts that provide opportunity to educate the public on conservation.

**Performance Measure**

SDDA and SDACD will develop and maintain a list that is made available on [www.sdconservation.org](http://www.sdconservation.org) and [sdda.sd.gov](http://sdda.sd.gov).

**Objective 6.6**

**Objective**

Through 2019, establish four new partnerships annually to develop new outreach activities.

**Performance Measure**

Conservation Districts will report if any new partnerships were developed in their annual accomplishment reports.



## Funding

### Goal 7

Each conservation district will increase their supplemental funding by pursuing additional services or projects.

#### Objective 7.1

##### Objective

Through 2019, conduct annual surveys of both district supervisors and employees regarding their anticipated funding and training needs.

##### Performance Measure

- a. SDDA will report annually if an annual survey was developed and distributed.
- b. SDACD will report annually the number of districts that responded to the survey.

#### Objective 7.2

##### Objective

Through 2019, incorporate training at one annual conservation district employee area meeting that is based on the results of the annual survey.

##### Performance Measure

- 1. Strategy: Educate employees and supervisors on the types of grants available and writing grant applications.
- 2. Strategy: Alternate training sessions between grant opportunities and grant writing.
  - a. SDDA will report annually where training session was held.
  - b. Conservation Districts will report number of employees and supervisors/managers that attended the training in their annual accomplishment reports.

#### Objective 7.3

##### Objective

Through 2019, provide a regularly updated list of grants available and applications on the internet.

##### Performance Measure

- a. SDDA will provide a list of grants available and applications on its website (<http://sdda.sd.gov>).
- b. SDACD will provide a list of grants available and applications on its website ([www.sdconservation.org](http://www.sdconservation.org)).

#### Objective 7.4

##### Objective

Each conservation district will increase its supplemental funding by one additional source by 2019.

##### Performance Measure

Conservation Districts will report any additional funds (not including Conservation Commission and County funds) acquired through seeking supplemental funding or providing additional services in their annual accomplishment reports.

#### Objective 7.5

##### Objective

Obtain funding for 14 new conservation technicians by 2019 based on the districts' 2012 staffing levels.

##### Performance Measure

Conservation Districts will report number of conservation technicians on staff in their annual accomplishment reports.  
- 2012 Baseline: 21 conservation technicians.





## Energy

### Goal 8

To promote the use of renewable energy and energy conservation through advocacy and education.

#### Objective 8.1

##### Objective

Through 2019, create a clearinghouse of information regarding renewable energy and energy conservation on the internet.

##### Performance Measure

The SDACD and SDDA websites will contain links to a renewable energy/energy conservation clearinghouse.

#### Objective 8.2

##### Objective

Through 2019, establish one new partnership each year with groups, such as the Public Utility Commission, to educate the public on and to advocate for the utilization renewable energy and energy conservation.

##### Performance Measure

SDDA and SDACD will report the number of partnerships established in their annual accomplishment reports.

#### Objective 8.3

##### Objective

Educate producers on the importance of energy audits and how to conduct them by creating one workshop in each conservation district by 2019.

##### Performance Measure

SDDA, NRCS, SDACD, and other conservation partners will annually report the number energy audit workshops.



## Acronym List

AFO	Animal Feeding Operation	NRCS	U.S. Dept. of Agriculture, Natural Resources Conservation Service
BLM	Bureau of Land Management		
BMP	Best Management Practice	NRI	National Resources Inventory
CAA	Clean Air Act	RC&F	South Dakota Department of Agriculture, Division of Resource Conservation & Forestry
CAFO	Concentrated Animal Feeding Operation		
CCPI	Cooperative Conservation Partnership Initiative	RWA	Rapid Watershed Assessments
CRP	Conservation Reserve Program	SAFE	State Acres for Wildlife Enhancement
CSP	Conservation Stewardship Program	SDACD	South Dakota Association of Conservation Districts
CWA	Clean Water Act	SDDA	South Dakota Department of Agriculture
ECP	Emergency Conservation Program	SD DENR	South Dakota Department of Environment and Natural Resources
EPA	Environmental Protection Agency	SD GFP	South Dakota Department of Game, Fish & Parks
EQIP	Environmental Quality Incentives Program	SDSU	South Dakota State University
EWPP	Emergency Watershed Protection Program	State	The State of South Dakota
EWPP-FPE	Emergency Watershed Protection Program Floodplain Easements	SWD	Surface Water Discharge
FRLPP	Farm and Ranch Lands Protection Program	TMDL	Total Maximum Daily Load
FSA	U.S. Department of Agriculture, Farm Service Agency	USACE	U.S. Army Corps of Engineers
GRP	Grassland Reserve Program	USDA	U.S. Department of Agriculture
HUC	Hydrologic Unit Code	USFS	U.S. Forest Service
NPDES	National Pollutant Discharge Elimination System	USFWS	U.S. Fish and Wildlife Service
NPS	Nonpoint Source Pollution	USGS	U.S. Geological Survey
		WHIP	Wildlife Habitat Incentives Program
		WPA	Waterfowl Production Area
		WRP	Wetlands Reserve Program



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