CLEAN WATER ACT SECTION 319

NONPOINT SOURCE CONTROL PROGRAM

FINAL REPORT

GRASSLANDS MANAGEMENT AND PLANNING PROJECT

SEGMENT 3

SPONSOR

SOUTH DAKOTA GRASSLANDS COALTION

PROJECT COORDINATOR

JUSTIN JESSOP

FEBRUARY 2014

This project was conducted in cooperation with the State of South Dakota and the United States Environmental Protection Agency, Region VIII.

Grants C9998185-09 andC9998185-10

EXECUTIVE SUMMARY

Project Title: Grasslands Management and Planning Project – Segment 3

Grants: C9998185-09 and C998185-10

Project Start Date: June 10, 2010 Project Completion Date: July 31, 2013

Funding:	Total Project Budget			$796,618.88
	Section 319 Grants	998185-09	Incremental	53,566.72
		998185-10	Base	200,250.00
		998185-10	Incremental	171,183.28
	Total Section 319 Grants			$425,000.00
	Total Expenditures of EPA Funds			$425,000.00
	Total Section 319 Match Accrued			$286,263.30
	Other Federal			$ 85,355.58
	Total Expenditures			$796,618.88

The project goal was:

> Reduce sediment, nutrient and fecal coliform bacteria loading of surface waters in South Dakota by improving range condition.

The project was the third segment of the South Dakota Grazing Management & Planning Project, initiated during July, 2001 by the South Dakota Grassland Coalition to improve, water quality and wildlife habitat, increase biodiversity and maximize grassland manager economic sustainability maximized across the state**.**

The Coalition continued its partnership with grassland managers, grassland and livestock organizations, and local, state, and federal agencies formed partnerships to implement a strategy developed during previous project segments to design, implement, and monitor "management intensive" grazing systems that would lead to attain the project goal..

The partners established three objectives to continue progress toward attaining the goal:

1. Provide grassland managers with the technical assistance needed to plan 160,000 acres of managed grazing systems, and complete the implementation of systems on an additional 120,000 acres of grasslands.

2. Transfer grassland management information to a minimum of 10,000 South Dakota producers, 20 researchers, 40 grassland specialists, and the public (189,940).
3. Monitor and evaluate project progress toward the attaining the project goal realized by implementing the practices selected to reach the objectives established for this project segment.

As the partners developed grazing plans during this project segment, they:

- continued the selection of practices that would maximize the probability that the grazing system operator would realize increased profits while improving the ecological status of the grasslands, improving water quality and providing habitat for a healthy, more diverse wildlife population and
- incorporated the concept that managed grazing is a practice that leads to improved soil health into benefits of adapting the practice in project outreach and information transfer activities.

During this project segment, 75 producers who manage nearly 461,000 acres of grasslands in 35 counties were provided grazing management assistance. The numbers increase the cumulative totals to 195 producers and nearly 910,000 acres respectively in 39 counties having received assistance for the development and implementation of managed grazing systems that range from 30 to over 31,500 acres in size.

Practices used to install grazing systems typically include:

- cross fence,
- off stream water sources – usually by pipeline and tanks and
- riparian exclusion.

On the grasslands where the practices installed and management techniques adopted:

- ecological status (range condition) has improved by at least one ecological class condition - primarily fair to good,
- forage production has stabilized with an accompanying improvement in the efficiency of the water cycle as runoff was reduced and
- nonpoint source pollution originating from the grasslands in the managed grazing installed decreased.

Segment 3 outreach and information transfer activities provided nearly 1,840,000 individuals with the opportunities to learn about the project and the environmental and economic benefits of managed grazing. The number increases the cumulative total for all project segments to slightly more than 4.5 million since 2001. The totals include estimated booth traffic at events (conferences, trade shows, etc.); attendance at field days, workshops, and meetings; circulation of periodicals and radio station market share.

Much of the circulation increase experience during the project period can be attributed to the conservation and Leopold Award articles that appeared in Minneapolis Star Tribune, Miami Herald

and Settle Post Intellinger which have combined circulation of more than one million. It is suggested the value of articles such as these is in building support for policies and programs, such as the Grasslands Sustainability Initiative (GSI) and sod busters provision in the farm bill among policy makers and urban area residents that may not understand the connection of such programs to the nation's environmental health.

The formation of working relationships with nature and environmental groups or members of groups such as the South Dakota Ornithologist Union, Ducks Unlimited and the Sand County Foundation (Unexpected project outcome reported in the project segment 2 final report) continues. It is suggested that these organizations support of managed grazing as a water quality best management practice (BMP) that:

- has a positive impact for producers,
- promotes preservation of grasslands,
- preserves of native vegetation and
- provides habitat for game and non game species

maybe critical factors in generating support for farm programs that will slow the conversion of grass to crop land that is taking place in the Prairie Pothole region.

During 2010, because of the South Dakota Grasslands Coalition's demonstrated success with the implementation of grassland conservation practices, the Sand County Foundation partnered with the Coalition and South Dakota Cattlemen's Association Aquarium as cosponsors for the Leopold Conservation Award in South Dakota. The award recognizes leadership in voluntary conservation and ethical land management. While the award recognizes the accomplishments of a South Dakota farm/ranch family each year, it also provides an added benefit – showcases conservation as a viable tool for developing and operating a an economically sustainable agricultural operation.

The project goal was attained.

Additional reductions of nonpoint source pollution originating from grazing lands for which management plans are developed and implemented are expected during the implementation of the workplan for segment four of the South Dakota Grazing Management & Planning Project.

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INTRODUCTION

The Grasslands Management and Planning Project was developed to continue the implementation of grazing management practices that reduce NPS by improving range condition initiated during 2001 by the Grazing Management & Planning Project (formerly the Management Intensive Grazing Systems (MIG) Project). The project was funded in part by Environmental Protection Agency (EPA) Clean Water Act Section 319 Project Grant numbers C9981850-9 and C9981850-10 awarded through the South Dakota Department of Environment and Natural Resources (DENR).

When the Grasslands Management and Planning Project was initiated slightly more than 50 percent of South Dakota's approximately 48,614,000 acres were grasslands. Of the approximately 2.5 million acres an estimated 83 percent were rated as being either in poor, fair, or good ecological status (range condition) and providing less than optimum environmental and economic benefits.

The SD Department of Agriculture places the current number of grazing lands at 2.3 million acres. Much of the decrease has occurred in 16 counties in the central portion of the state (GAO-07-1054) as grasslands were converted to cropland, primarily row crop production. National Agricultural Reporting Service (NARS) data indicates that the number of beef cattle in the state decreased by approximately 121,000 head (1.81 to 1.69 million) during the same time period.

According to the NARS, during 2012 the number of farms/ranches in the state totaled 31,898 (approximately 1,000 less than 2001). Nearly three-fourths of these producers use the grasslands for livestock grazing or wildlife habitat with the sale of pastured livestock being the primary source of revenue for 12,000 of the livestock operations.

The current, as well as the previously referenced projects, were completed by the South Dakota Grasslands Coalition (SDGLC) in partnership with agricultural organizations; local, state, and federal agencies and the academic community. Since the coalition was formed during 1998, its principle project partners have included, among others, the:

- South Dakota Association of Conservation Districts (SDACD),
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS),
- South Dakota State University (SDSU),
- South Dakota Department of Game, Fish & Parks (GF&P),
- United States Department of Interior-Fish and Wildlife Service (USFWS)-South Dakota Partners for Fish and Wildlife (US FWS),
- South Dakota Discovery Center and Aquarium and
- DENR
- SD Farm Bureau
- World Wildlife Fund

Each project partner contributed financial and/or technical assistance that generated the synergy which resulted in project acceptance by a wide range of interests and the level of success achieved.

A complete list of project partners and their contributions to project success is located in coordination section of this report.

SDGLC is part of the Natural Resources Conservation Service (NRCS) Grazing Lands Conservation Initiative (GLCI). The initiative is a nationwide effort designed to provide technical assistance to private grazing land operators and increase the awareness of the importance of grazing land resources. For additional information about the SDGLC visit:

http://www.sdgrass.org/

During completion of the Managed Intensive Grazing Project Implementation Plan (PIP) from 1999 to 2001, project activities centered primarily on establishing demonstration sites to showcase the grazing system alternatives that grassland managers could employ to improve forage production by improving range condition. The improved range condition and associated forage production increase would, in turn, increase the pounds of livestock produced per acre while at the same time improving range condition and thereby reducing NPS.

A map showing the locations of the demonstration sites established is available by visiting:

http://www.sdconservation.org/grassland/managing/gmd/index.html

Accomplishments realized and challenges encountered during the MIG and project segments 1 and 2 are summarized below.

For a more complete description of the activities and outcomes visit the web sites listed below:

http://denr.sd.gov/dfta/wp/WQProjects/Grasslands.pdf

http://www.sdgrass.org/

During the implementation of the South Dakota Grazing Management & Planning Project (MIG) grassland managers; grassland and livestock organizations; and local, state, and federal agencies partnered to design, implement, and monitor six managed grazing demonstration sites totaling 7,681 acres. Information gained from the on-ranch demonstrations and other producers was shared with grassland managers, researchers, agency specialists, and the public.

The successes realized from the activities completed during the MIG Project were used to develop the initial Grasslands Management and Planning Project workplan implemented during 2001 – 2007. Financial assistance for the project was provided by a Section 319 Implementation Project Grant numbers C9998185-01 and C9998185-03, C9998185-04 and C9998185-07 secured through DENR. During completion of the projects, here-in-after referred to as project segments 1 and 2, SDGLC and its project partners installed or were responsible for the installation of grazing management practices on more than 547,526 acres that resulted in the reduction of Nitrogen, Phosphorous and sediment entering South Dakota's lakes and streams by 309,697 pounds, 55,992 pounds and 32,637 tons respectively.

Conservation practices used to install the grazing systems included:

- water development – wells, pipeline tanks, pasture pumps and dams and dugouts,
- fence - cross, perimeter and riparian exclusion,
- managed /rotational grazing,
- stream crossings and
- grass seeding

Information and education (I&E)/outreach activities completed during segment 1 and 2 provided managed grazing information and opportunities to more than 3.7 million people who attended project sponsored grazing schools (8) and management workshops (53), tours or were provided information using print and electronic media releases and feature articles (49 with total circulation/listeners =more than 2.94 million).

Project segment 3 was designed to continue the implementation of NPS reduction BMPs on grasslands initiated during the MIG and project segments 1 and 2. During the completion of this three year project segment, the SD Grassland Coalition and its project partners:

- provided 68 livestock producers who manage more than 401,100 acres of South Dakota grasslands with the assistance needed to:
    1. design grazing systems ranging in size from 46 to more than 39,000 acres and
    2. assisted 76 producers who manage 363,836 acres with the installation of grazing systems planned during this and previous project segments.
- sponsored 12 field days/tours attended by 915 producers and resource managers,
- conducted 6 Grazing Schools attended by 165 ranchers and resource managers,
- maintained the project website,
- presented project related information at 21 workshops/conferences attended by approximately 804 individuals,
- hosted 12 exhibits/displays at livestock shows, conventions, and workshops, and
- reached a print and electronic media audience totaling nearly 1.75 million with news releases, interviews and feature articles (radio – 22; print - 34).

During all project phases, there was a trend for producers requesting assistance to be those whose grazing lands were rated in the fair, good and excellent categories while those with lands rated as poor were less likely to participate.

Based on information provided by resource inventories and follow-up activities with producers who installed grazing systems, it is estimated that the practices installed resulted in 75 percent of participant's grasslands improved by one ecological class.

An unexpected outcome of the grassland project is the development of working relationships with nature and environmental groups or members of groups such as the South Dakota Ornithologist Union, Sand County Foundation, North Dakota and Nebraska Grasslands programs, World Wildlife Fund and National Association of Fish and Wildlife Agencies.

These alliances have generated support of managed grazing as not only a water quality best management practice (BMP) that has a positive impact for producers installing the practice, but also a practice that promotes preservation of grasslands and therefore habitat for game and non game species of animals and the preservation of native vegetation. It is suggested that this support maybe a critical factor in generating support for programs that will slow the conversion of grassland to croplands that is taking place in the Prairie Pothole region. Central SD is an area where the rate of conversion is especially high.

During 2010, because of the SD Grasslands Coalition's demonstrated success with the implementation of grassland conservation practices, the foundation partnered with the South Dakota Grasslands Coalition and the South Dakota Cattlemen's Association to serve as the sponsor for the Leopold Conservation Award in South Dakota.

The Sand County Foundation offers the award in nine states through partnerships with individuals, organizations and agencies. The award recognizes leadership (Figure 1) in voluntary conservation and ethical land management. Information regarding the award is available by accessing the sites listed below:

http://leopoldconservationaward.org/
http://leopoldconservationaward.org/participating-states/south-dakota/

The call for applications is outlined on the first of the sites. Select the state after accessing the site.

State recipients receive a Leopold Crystal and a $10,000 check.

South Dakota ranchers receiving the award and links to videos showcasing their operations follows:

2010	Rick & Marliss Doud, Midland, SD	http://www.youtube.com/watch?v=DX0G5LY5_Fo
2011	Mortenson Ranch, Hayes, SD	http://www.youtube.com/watch?v=9YsWjpD_SDo
2012	Kopriva Ranch, Raymond, SD	http://www.youtube.com/watch?v=z9cQSnAdcvc
2013	Guptill Ranch, Quinn, SD	http://www.youtube.com/watch?v=DGsjUdScWZM

Figure 1. Governor Dennis Duggard presenting the Guptill family with the 2013 South Dakota Leopold Award in Governor's office at the State Capitol. Pictured with Governor Duggard (5th from left) are Tia, Paul, Pat, Mary Lou, Tate and Josie Guptil. Not pictured is Troy Guptill.

The National Association of Fish and Wildlife Agencies selected Highmore rancher Jim Faulstich as its 2013 Private Lands Fish and Wildlife Stewardship Award recipient. The award will be presented at the Associations annual meeting scheduled for September in Portland, Ore. Faulstich, SD Grasslands Coalition Chairman, will be recognized for conservation work at the Daybreak Ranch where he raises mostly Red Angus cattle and operates a hunting lodge.

For additional information about the award click on the link:

http://www.fishwildlife.org/files/2013-Private-Lands

During the segment 3 project period, the PIP was amended twice. The first increases of funding to complete follow-up activities with producers assisted during all project segments. The second amendment extended the project period to July 31, 2013 to align with the start of project segment 4. See the budget section of this report for specific information.

A descriptive summary of the activities completed during project segment 3 to achieve the results summarized above, a comparison of planned versus accomplished milestones and an evaluation of the accomplishments in relation to attaining the project goal is provided in the report sections that follow.

Project Goals, Objectives, and Activities

Project Goal

The project goal was:

> "Reduce sediment, nutrient and fecal coliform bacteria loading of surface waters in South Dakota by improving range condition."

To attain the goal, activities were selected to reach objectives established to provide grassland managers in South Dakota with the technical assistance needed to develop and install managed grazing systems and implement an information transfer program. By completing the activities selected to reach the objectives and thereby attain the project goal, water quality and wildlife habitat will be improved, biodiversity increased and grassland manager economic sustainability maximized in South Dakota.

The project activities and milestones established as indicators of success are presented as amended.

Accomplishments by Task

Objective 1: Provide grassland managers with the technical assistance needed to plan 160,000 acres of managed grazing systems, and complete the implementation of systems on an additional 120,000 acres of grasslands by July 31, 2013.

Grasslands in 319 water quality project areas and riparian areas in southeast South Dakota were given technical assistance priority during this project segment. Completion of the activities included in the workplan tasks were planned to result in the cumulative totals of acres planned and implemented as a result of project activities to 424,800 and 460,860 acres respectively.

Task 1: Provide livestock producers with the technical assistance needed to plan and operate grazing systems.

Product 1: Grazing Management Plans - 160,000 grassland acres.

Project staff, and range consultants will plan 60,000 acres of managed grazing systems (Prescribed Grazing – Practice Code 528). Of the remaining 100,000 acres, 50,000 acres will be planned by Belle Fourche River project staff and consultants and 50,000 by other agency specialists and NRCS certified technical service providers (TSPs) respectively.

The planning process:

- begins with a resource inventory of the land that will be included in the system and determination of the producer's management philosophy and capabilities,

- uses methods and practices outlined in the *NRCS National Planning Procedures Handbook, National Range and Pasture Handbook, and the South Dakota Field Office Technical Guide*,
- includes development of alternative water sources to facilitate excluding grazing in riparian area and
- considers rural water hook up as the preferred alternative water source.

See Product 2 for the practices expected to be included in the plans developed.

Both of the USDA publications are available by accessing: the following web sites:

http://www.fsa.usda.gov/FSA/webapp?area=fsahome&subject=landing&topic=landing
http://www.nrcs.usda.gov/technical/efotg/.

During project segment 3, management plans were developed for;

- 30 producers from 19 Counties who manage 217,178 acres (Table 1) project staff and
- 38 producers in 24 Counties who manage 183,950 acres by Belle Fourche River project staff and consultants and other agencies and project partners (Table 2).

Table 1. Managed Grazing Plans Developed by Project Staff.

County	Number of Producers	Acres
Aurora	2	5,947
Bon Homme	1	2,500
Brookings	1	100
Charles Mix	1	6,632
Davison	1	1,120
Edmunds	2	4,064
Hand	1	2,620
Hughes	1	13,500
Hutchinson	1	160
Jerauld	2	6,037
Jones	2	8,000
Lyman	4	19,099
McPherson	1	5,000
Meade	1	1,980
Mellette	1	1,944
Moody	2	126
Perkins	1	1,800
Todd	3	56,360
Walworth	1	22,000
Total	**30**	**217,178**

Table 2. Grazing Plans Developed As A Result of Project Activities.

County	Number of Producers	Acres
Brule	1	4,500
Butte*	1	12,000
Campbell	1	1,000
Charles Mix	2	14,587
Corson*	1	4,200
Davison	2	6,587
Edmunds	2	6,813
Gregory	1	3,000
Hand	1	4,156
Hanson	1	880
Hyde	2	7,477
Jerauld	2	4,860
Lawrence*	1	4,000
Lincoln	1	60
Lyman	1	2,311
McCook	1	3,002
McPherson	4	6,671
Meade*	2	15,750
Mellette	2	11,163
Perkins*	2	8,604
Potter	1	3,500
Roberts	1	1,100
Stanley	2	23,900
Ziebach*	1	8,160
Total	**38**	**183,950**

***Belle Fourche Project**

Criteria used to select the source(s) of funds to be accessed to install the grazing systems included:

- "fit-to-program",
- availability in a timely manner,
- the operator's preference, and
- compatibility of the program to system manager's operation.

An example of a grazing plan developed is shown in Figure 2. The system is divided into 10 paddocks using cross fence. Water was supplied using a pipeline and three tanks with each tank positioned to serve multiple paddocks.

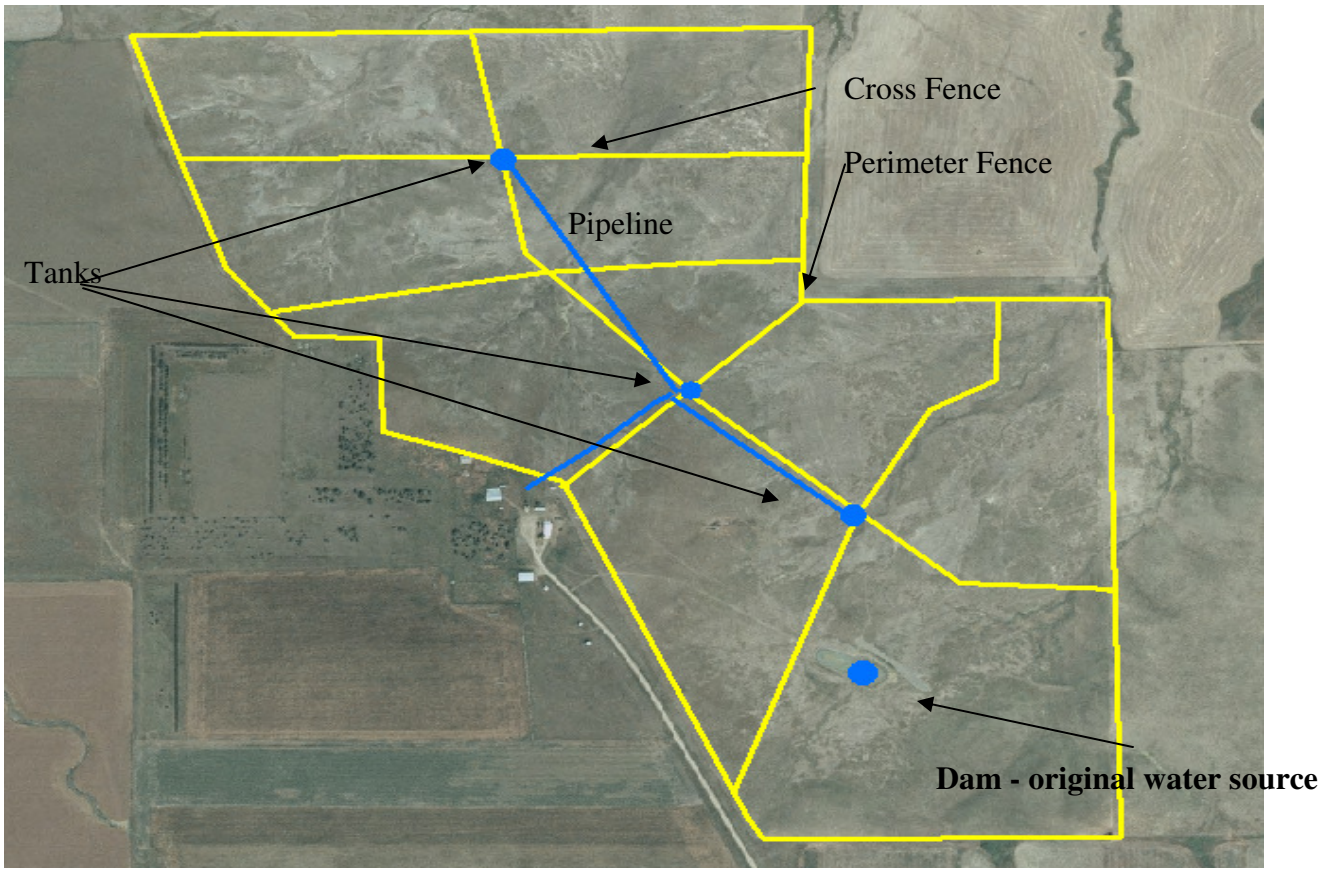

Figure 2. Managed grazing system design.

Funds to provide the technical assistance needed to develop the grazing plans were provided by:

- NRCS – Environmental Quality Incentives Program (EQIP),
- FSA- Continuous Conservation Reserve Program-(CCRP) and
- US FWS-SD *Partners for Fish & Wildlife Program*.

Livestock producers who developed a grazing system were provided with tools to aid in managing and monitoring the systems. The tools included a copy of *Grassland Plants of South Dakota and the Northern Great Plains* and a grazing stick. *Grasslands Plants of South Dakota and the Northern Great Plains* published with support from the South Dakota Department of Environment and Natural Resource's 1998 Clean Water Act Section 319 NPS Grant from EPA (C9998185-98) and the 319 NPS Grant awarded to SDACD through DENR for the Bootstraps Inventory and Coordination Project (C9990185-97).

A grazing stick is a specially designed yardstick with formulas, tips and guidelines printed on the sticks four sides to help manage forage production relative to animal units using the pasture or paddock (Figure 3). During project segment 2, funds to purchase:

- 4,000 grazing sticks were provided by the USFWS South Dakota Partners for Fish and Wildlife program and the Grasslands project and

- 2,000 sticks by SDGF&P, USFWS SD Partners for Wildlife Program, and the North Central Resource Conservation and Development Association (NC RC&D).

Figure 3. Grassland managers and producers learning to use a grazing stick.

Milestones:
Project Segment 3 - Planned - 50 plans encompassing 160,000 acres.

Accomplished – 30 plans-encompassing 217,178 acres developed by project staff; 38 plans encompassing 183,950 by project partners. Total = 68 plans encompassing 401,128 acres. (8 plans developed by Belle Fourche Project encompassing 50,714 acres)

Cumulative – Planned – 91 plans encompassing 424,800 acres plus eight demo sites encompassing 7,681 acres

Accomplished – 209 plans encompassing nearly 7974,000 acres planned by project staff and project partners.

Product 2: Implement improved grassland management systems on 120,000 acres of grasslands. The total includes the 60,000 acres planned by the project, and 60,000 acres planned and implemented with significant technical assistance from partnering agencies.

Technical and financial assistance to install the practices selected to construct the systems (Table 3) resulted in the implementation of 76 managed grazing systems that encompass 363,836 acres (Tables 4 and 5) during project segment 3.

Technical assistance was provided by:

- NRCS,
- SD GF&P,
- US FWS, and
- Local conservation districts.

Financial assistance was provided by local, state and federal organizations and agencies which included:

- US Fish and Wildlife Service (USFWS) South Dakota Partners for Fish and Wildlife using the North American Wetlands Conservation Act Grants (NAWCA),
- NRCS - EQIP,
- South Dakota Game, Fish and Parks (GFP) – SD GF&P Private Lands Habitat program,
- SD Conservation Commission – Soil and Water Conservation Fund and
- DENR – Section 319 TMDL Implementation Project Grants

The Tables 4 and 5 also include cumulative total of acres of managed grazing systems installed since the project's inception during 1999. When totaled, the acres of managed grazing installed using plans developed by the project and its partners equal 908,362 managed by 209 producers.

Figure 4 shows the location of grazing systems installed during project all segments and the MIG Project. Systems installed each project segment may be identified by color: The colors designating each project segment are:

1 - Blue
2 - Green
3- Purple
Demonstration sites - Red.

For additional information regarding the location of the demonstration sites visit:

http://www.sdconservation.org/grassland/managing/gmd/projects.html

Table 3. Managed Grazing Systems Installed Using Plans Developed By The Project.

County	Number of Producers			Acres		
	Project Segment 3	Project Segment 1 & 2	Cumulative	Project Segment 3	Project Segment 1 & 2	Cumulative
Aurora	2	3	5	5,947	3,991	9,938
Beadle		1	1		2,895	2,895
Bon Homme	1		1	2,500		2,500
Brookings	1	1	2	100	2,429	2,529
Brule	1	12	13	4,500	18,963	23,463
Buffalo	1	13	14	1,237	92,897	94,134
Butte		6			29,140	29,140
Charles Mix	2	1	3	6,632	2,040	8,672
Clay		1	1		300	300
Davison	1		1	1,120		1,120
Edmunds	2		2	4,064		4,064
Faulk		11	11		15,089	15,089
Gregory	1		1	5,123		5,123
Haakon		1	1		13,000	13,000
Hand	1	2	3	2,620	5,111	7,731
Hughes	1		1	13,500		13,500
Hutchinson	1		1	160		160
Hyde		3	3		7,620	7,620
Jerauld	2	3	5	6,037	4,096	10,133
Jones	2		2	8,000		8,000
Kingsbury		1	1		720	720
Lincoln		1	1		217	217
Lyman	4	3	7	19,099	20,319	39,418
McPherson	3	1	4	7,950	5,360	13,310
Meade	1	1	2	1,980	17,756	19,736
Mellette	1	1	2	1,944	2,400	4,344
Miner	1	2	3	487	607	1,094
Minnehaha		2	2		290	290
Moody	2	10	12	126	3,798	3,924
Pennington		1	1		6,400	6,400
Perkins	1		1	1,800		1,800
Potter		1	1		2,300	2,300
Sanborn		1	1		585	585
Stanley		1	1		13,398	13,398
Todd	3		3	56,360		56,360
Tripp		1	1		179	179
Turner		2	2		191	191
Walworth	1	3	4	22,000	15,483	37,483
Total	**36**	**90**	**119**	**176,286**	**287,574**	**460,860**

Table 4. Managed Grazing Systems Resulting From Project Related Activities.

County	Number of Applicants			Acres		
	Project Segment 3	Project Segment 1 & 2	Cumulative	Project Segment 3	Project Segment 1 & 2	Cumulative
Aurora		1	1		640	640
Brown		1	1		800	800
Brookings		1	1		1,036	1,136
Brule	1	2	3	4,500	4,700	9,200
Buffalo		1	1		86,500	86,500
Butte*	1	1	2	12,000	6,734	18,734
Campbell	1	1	2	1,000	4,000	5,000
Charles Mix	2	2	4	14,587	7,000	21,587
Clark		1	1		2,212	2,212
Corson*	1		1	4,200		4,200
Davison	2		2	6,587		6,587
Edmunds	2		2	6,813		6,813
Gregory	1		1	3,000		3,000
Haakon		3	3		12,500	
Hand	2	1	3	6,581	480	4,636
Hanson	1		1	880		880
Harding		1	1		3,384	
Hyde	2	6	8	7,477	15,545	23,022
Jerauld	2	2	4	4,860	2,733	7,593
Jones		4	4		3,392	3,392
Lawrence*	1		1	4,000		4,000
Lincoln	1		1	60		60
Lyman	1	8	9	2,311	23,201	25,512
Marshall		1	1		160	160
McCook	1		1	3,002		3,002
McPherson	4		4	6,671		6,671
Meade*	2	3	5	15,750	21,676	37,426
Mellette	2	2	4	11,163	31,246	42,409
Minnehaha		2	2		1,301	1,301
Moody		1	1		3,500	3,500
Perkins*	2		2	8,604		8,604
Potter	1	2	3	3,500	5,237	8,737
Roberts	1		1	1,100		1,100
Sanborn		1	1		240	240
Stanley	2		2	23,900		23,900
Sully	1		1	3,600		
Todd		1	1		12,635	12,635
Walworth	2	1		23,244	9,100	9,100
Ziebach*	1		1	8,160		8,160
TOTAL	**40**	**50**	**90**	**187,550**	**259,952**	**447,502**

*** Belle Fourche Project – Segment 3**

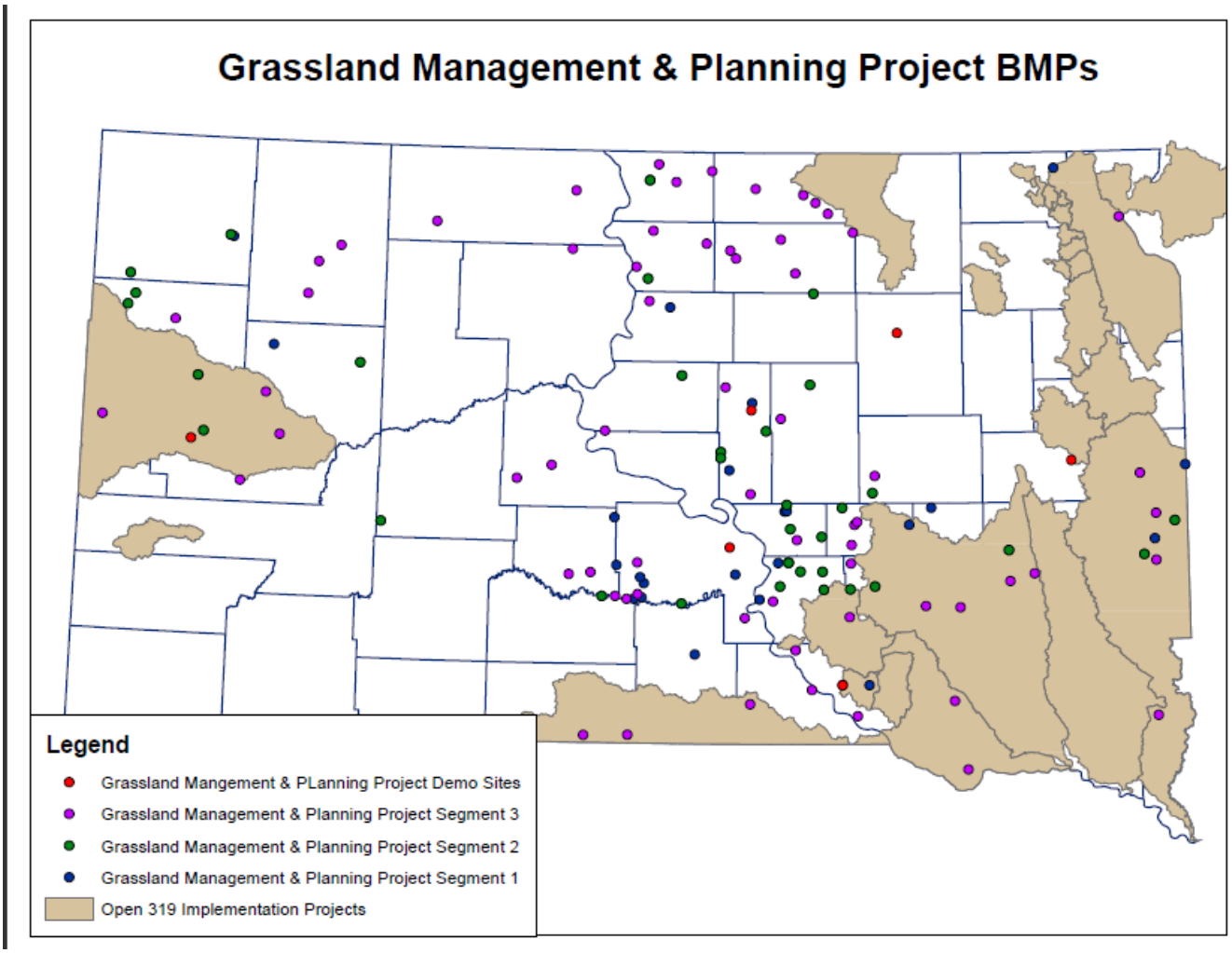

Figure 4. Locations of managed grazing systems installed.

Generalizations that may be made relative to the grazing systems planned and installed include:

- system size and paddocks within a system increases from east to west across the state,
- many of the systems installed during segment 1, and to lesser degree segment 2, were the direct result of Bootstraps, a holistic farm ranch program developed with financial assistance from EPA 319 and Pollution Prevention Grants awarded through DENR,
- the concentration of managed grazing systems installed in central SD during segments 1 and 2 can be attributed to this the area in which the grasslands project started following a Bootstraps meeting and many of the initial project leaders were from the central and south central portions of the state, and
- most systems designed and installed during the later portion of project segment 2 project period and during segment 3 were direct result of attendance at the project sponsored grazing school, a Holistic Resource Management (HM) course or a requirement for participants in the NRCS Grazing Sustainability Initiative (GSI) Program and the use of managed grazing as a water quality BMP has been incorporated into watershed TMDL implementation projects.

The practices used to install the practices and the cumulative total of each practice used during all project segments are shown in Table 5.

Table 5. Practices Used to Install Managed Grazing Systems.

Practice	Practice Code	Units			
		Project Segment 3		Cumulative	
		Planned	Complete	Planned	Completed
Planned Grazing (Acres)	528 Prescribed Grazing	120,000	401,128	424,800	947,000
Fence -Cross &Riparian Exclusion (linear Feet)	382 Fence & 390 Riparian Exclusion	120,000	96,282	325,000	556,132
Pipeline (Linear Feet)	516 Pipeline	120,000	137,625	250,000	533,705
Rural Water Hook-ups (Number)	516 pipeline	2	2	4	4
Tanks (Number)	614 Watering Facility	40	69	95	217
Dams/Dugouts (Number)	378 Pond	6	3	18	9
Grass Seeding (Acres)	512 Introduced Species & 550-Native Species	500	200	850	932
Stream Crossings (Number)	578	1	0	1	0
Wells (Number)	642 Water Well	4	0	10	5

Fence installed include single wire, three wire, high tensile electric or poly wire. Three wire was most often used for an exterior fence; single wire for cross fence within a system.

Grass seeding was used to convert cropland to native vegetation. Occasionally a producer included a non native species such as alfalfa in the seed mixture planted to provide greater forage value in the event a paddock was harvested for hay.

While steam crossings were included in the practices planned, none were determined to be necessary at the locations where systems designed were installed.

Options to supply water to a grazing system included rural water systems, wells and dams/dugouts. Rural water was the method of choice when available. Rural water provides:

- a reliable source of water,
- clean water which promotes improved herd health,
- reduced incidence of livestock entering surface water bodies, and
- consistent, positive environmental and economic benefits.

The use of rural water may require that the producer be innovative to ensure a reliable supply of water when location of the grazing system along a rural water system supply line and overall user demand system wide relative to delivery capacity. For example, a producer whose grazing system was located at the end of delivery line installed a storage tank to store meet peak demand periods for his livestock and accommodate other users contacted to the same feeder line.

The source of water to a grazing system was the determining factor relative "delivery" to the livestock within the system. When wells and rural water were the source, pipeline delivered the water to tanks. Sixty-nine water tanks were installed within the systems during project segment 3, total during all project segments equals 217.

Pipeline installed included both above and below ground (buried). While the project does not sell pipe, project staff assisted producers with placing orders for the one inch above ground polyethylene pipe (Figure 5). The pipe is relatively inexpensive, lightweight, and flexible and affords the system manager advantages over installing buried pipe. Using above ground pipe, producers are able to supply water to paddocks to pasture subdivisions at a lower cost than when using buried pipe. In addition, the portability of above ground pipe allows the producer to try water placement in an area before making the decision to put in a permanent system. Using easy to install quick couplers (Figure 4) to tap the above ground pipe allows grass managers a source of water wherever they determine a tank should be placed. Once the key is inserted into the coupler, water is free flowing.

Aboveground pipe was installed during project segment 3 to provide water to 4,000 acres. Added to the above ground line installed during segment 1 and 2, a total of 110 grazing systems covering 31,000 acres have installed above ground pipeline.

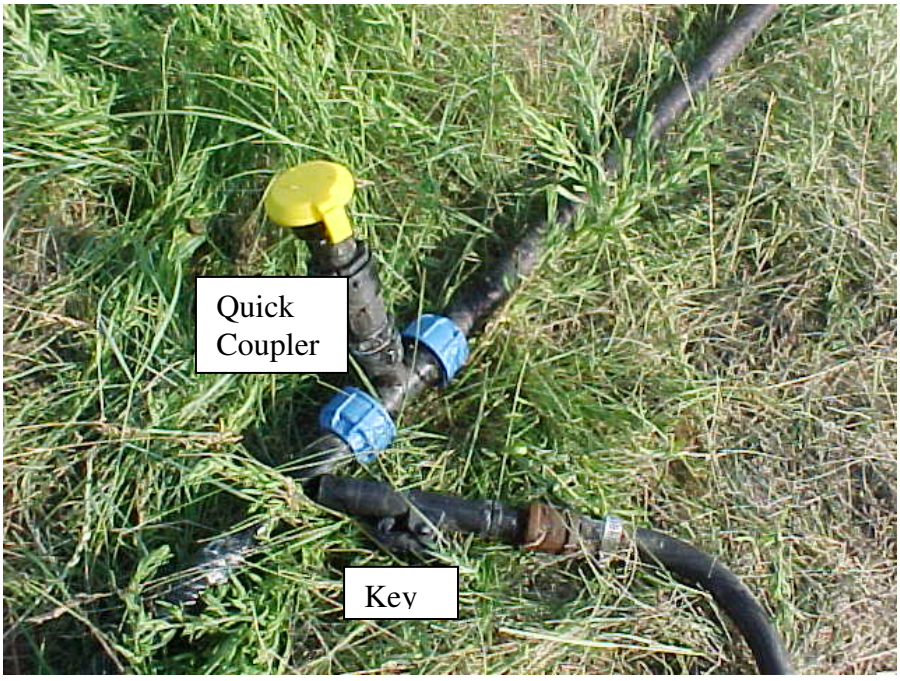

Figure 5. Above ground pipe with quick coupler.

Although drilling four wells was planned, none were drilled when it was determined either:

- access to a rural water system was available or
- economics associated with the size of the system served favored existing wells or existing rural water systems wells over other options.

Load reductions realized from the systems installed were determined using the Spreadsheet Tool for Estimating Pollutant Loads (STEPL) developed by EPA Region 5. The load reductions achieved

during each project year were provided to DENR in partial fulfillment of reporting requirements. The data was included in annual reports prepared using the format provided by DENR to facilitate entry into EPA's Grants Reporting and Tracking System (GRTS).

NPS pollution load reductions to SD lakes and streams realized from grazing systems installed during this and cumulative reductions from all project segments are listed in Table 6.

Table 6. NPS Load Reductions Realized From Rotational Grazing Systems Installed.

NPS Pollutant	Load Reduction	
	Project Segment 3	Cumulative
Nitrogen (lbs)	294,719	604,416
Phosphorus (lbs)	53,976	109,968
Sediment (tons)	36,226	68,863

Milestones:

Project Segment 3 - Planned - 60,000 acres planned by project staff + 60,000 acres planned by project partners - 120,000 acres installed.

Accomplished - Planned –176,286 acres planned by project staff + 187,550 acres planned by project partners = 363,836 acres. (50,714 acres by Belle Fourche Project)

Cumulative – 460,860 acres planned by project staff + 447,502 acres planned by project partners = 908,362 acres

Objective 2: Transfer grassland management information to a minimum of 10,000 South Dakota producers, 20 researchers, 40 grassland specialists, and the public (189,940).

Task 2: Complete information and education activities on grassland management, and water quality impacts of improved grassland management targeted towards 319 water quality project areas, riparian grassland areas, and grasslands in southeast South Dakota.

Product 3: Existing web site maintenance, Farmer/Rancher workshops, Grazing Schools, News Releases and Summer Grazing tours.

The project coordinator working in partnership with SDSU Range Science and NRCS outreach and public affairs persons and conservation district personnel continued to provide livestock producers, resource managers, the research community, students, and the general public with opportunities to learn about grassland management.

The activities provided opportunities to learn about the project and the environmental and economic benefits of managed grazing to more than 1.8 million during this project segment and more than 4.5 million since the project were initiated during 2001. The total includes estimated booth traffic at events such as conferences, and trade shows, attendance at field days, workshops, and meetings; circulation of periodicals, radio station market size, web hits and tweets. Milestone comparisons of

planned versus accomplished outreach activities for project segment 3 and cumulative for all project segments are summarized in Table 7.

The information transfer and involvement opportunities offered were, for the most part, a continuation of activities initiated during previous project segments and build on previous successes. Therefore, the summary of accomplishments/outcomes that follows is limited to a brief description and highlights of transfer and involvement opportunities provide during this project segment, with cumulative information regard all project segments. For a more descriptive summary regarding involvement opportunities visit:

www.sdgrass.org

https://www.facebook.com/SouthDakotaGrasslandCoalition

http://www.sdconservation.org/grassland/managing/gmd/index.html

http://denr.sd.gov/dfta/wp/wqinfo.aspx#Project

Table 7. Information Transfer – Educational Outreach Activities Milestone Comparison.

Activity	Project Segment 3			Cumulative		
	Planned	Completed	Individuals Reached	Planned	Completed	Individuals Reached
Workshops	6	29	804	15	79	3,256
Grazing Schools	2	6	165	7	14	412
News Releases-electronic media	4	22	400,000+ (est.)	Not Available	37	1,650,000
News Releases- print articles about project related activities		34	1,274,292	[19]	68	>2,490,000
Tours/Field Days	2	12	917	21	59	3,267
Radio Interviews	0	2	60,000	0	2	60,000
Web Site	1	1	47,567	1	1	160,253
Totals			1,836,688			± 4,500,000

Web Site

The grazing management web site established within the SDACD site during 2000 was maintained during the current project period. The site is available by visiting:

http://www.sdconservation.org/grassland/managing/gmd/index.html

Site features include:

- information about SD grasslands, grassland health and management
- descriptions and journals of demonstration site activities,
- interactive technical assistance bulletin board, and
- links to other grazing information resources.

The number of site visits peaked at nearly 60,000 (Table 8) during calendar year 2008 The 47,567 l "hits" (Table 8) is less than 100,000 projected for project segment 3 but exceeds and the commutative total milestone, 340,659 versus 180,000.

Table 8. Website Hits During Project Segment 3.

Time Period	Projected	Actual
	100,000	
March 2010-October 2010		10,843
January 2011-December 2011		15,721
January 2012-October 2012		10,899
November 2012 – July 2013		10,104
TOTAL		47,567

The SD Grasslands Coalition also maintains a web site and Facebook page that promote grassland issues. The coalition web site was updated during April 2013; Facebook page initiated during July 2013. To access the sites visit:

www.sdgrass.org

https://www.facebook.com/SouthDakotaGrasslandCoalition

Operation and maintenance of the website is accomplished by a SD Grasslands Coalition member; Facebook by a SDSU Range Science Professor who is actively engaged with many Coalition activities, to include this project.

Displays

The Grassland display was developed during the project segment 1. Display graphics, pictures and accompanying materials are periodically updated by the project coordinator with assistance from NRCS-Public Affairs Personnel to reflect current grassland conditions and management methods and project activities.

The Sand County Foundation has provided the Coalition and partners with a display which promotes the Leopold Award. See Introduction, page 4, for additional information regarding the Leopold award.

The project display was used to promote grassland management at 8 workshops, conferences, fairs and other events during the project period to bring the total for segments 1 – 3 to 18.

See Table 9 for a summary of the events at which the display was used during project segments 1 -3

Ag Day at the Washington Pavilion of Arts and Science:

- a family oriented event in South Dakota's largest city,
- highlights the role agriculture plays in the economy and people's everyday lives and
- offer hands on learning experiences related to agriculture to urban residents.

The project's exhibit display features South Dakota grasses.

Table 9. Summary of Events at Which the Project Display was used.

Years	Event	Location	Estimated Booth Traffic/Attendance (Cumulative Total)
2001-2003, 2010-2012	SD Cattleman's Assoc. Convention	Aberdeen, Huron, and Pierre , SD	1,425
2002, 2004, 2005 and 2006	Black Hills Stock Show and Rodeo	Rapid City, SD	1,200,000
2002	SDACD Convention	Pierre, SD	296
	Rancher Workshops		
2002, 2007, 2009, 2011, and 2013		White River, SD	1,211
2002		Presho, SD	
2004, 2012		Mission, SD	
2004		Miller, SD	
2005		Vermillion, SD	
2003, 2006 and 2012	National GLI Convention	Orlando, FL, Nashville, TN & St. Louis, MI	2,600
2003 - 2010	Grazing Schools	Oacoma/ Chamberlain, SD	247
2004 - 2005 and 2007	DakotaFest	Mitchell, SD	100,000
2008	SD Math/Science Teacher's Convention	Huron, SD	40
2008 -2013	Washington Pavilion of Arts and Science Ag Day	Sioux Falls, SD	7,975
2009 - 2013	Beef Day at the Capital	Pierre, SD	1,050
2013	Ag Fest	Pierre, SD	200
Total			1,314,748

Beef Day at the Capital:

- is held at the State Capitol Building during the state legislative session,
- targets legislators and lobbyists,
- provides information regarding the state's beef industry and its economic impact and,
- hosted by the SD cattlewomen with assistance from industry related groups and agencies such the SD Cattlemen's Association, SD Beef Council, NRCS, Ag in the Classroom and the Grasslands Coalition.

Ag Fest:

- is hosted by the South Dakota Ag Unity, a coalition of agriculture organizations that provides a unified voice to policy makers and others with regard to agriculture related issues,
- targets legislators and lobbyists and
- member groups provide information in a social setting at a reception held during the state's annual legislative session.

While the Coalition became an Ag Unity member during previous project segments, the organization became was an Ag Fest exhibitor (Figure 6) for the first time during 2013.

Figure 6. Project display at the 2013 Ag Fest in Pierre, SD.

Product 6: Complete information transfer and educational outreach activities on grassland management.

Tours and Field Days

More than 900 farmers, ranchers, and resource managers attended the 12 tours and field days held during the project period (Table 10) to transfer information to producers and resource managers about the benefits of managed grazing. The tours and field days hosted during the current project period bring the total number hosted and attendance to 60 tours and 3,190 respectively.

Four of the tours were at Leopold Conservation Award winner ranches. South Dakota ranchers receiving the award and links to videos showcasing their operations follows:

2010	Rick & Marliss Doud, Midland, SD	http://www.youtube.com/watch?v=DX0G5LY5_Fo
2011	Mortenson Ranch, Hayes, SD	http://www.youtube.com/watch?v=9YsWjpD_SDo
2012	Kopriva Ranch, Raymond, SD	http://www.youtube.com/watch?v=z9cQSnAdcvc
2013	Guptill Ranch, Quinn, SD	http://www.youtube.com/watch?v=DGsjUdScWZM

A tour (Figure 7) held at the Faulstich Ranch located north of Highmore, provided Interior Secretary Salazar a field platform from which to publicize the Grasslands Sustainability Initiative (GSI) during his April 2011 visit to South Dakota..

Table 10. Tours and Field Days.

Tour Site	Date	Participants	Comments
Nickeson,Veblen, SD	August 2010	60	Grass Fed Beef workshop
Faulstich, Highmore, SD	April 2011	45	Interior Secretary Salazar
Headley, White Lake, SD	June 2011	44	Bird Tour
Cooper, Custer, SD	July 2011	45	Tour of SD GF&P ranch
Doud, Midland, SD	July 2011	135	Leopold Conservation Award winner
Aberdeen, SD	October 2011	95	Partners for Conservation tour
Davis/Smeenk, Belle Fourche, SD	June 2012	55	Bird Tour
Mortenson, Hayes, SD	June 2012	101	Leopold Conservation Award winner
Kopriva, Clark, SD	September 2012	93	Leopold Conservation Award winner
Western SD	May 2013	50	Legislator's tour
Smith, Montrose, SD	June 2013	60	Bird Tour
Guptill, Quinn, SD	June 2013	132	Leopold Conservation Award winner
Total		**915**	

Figure 7. Interior Secretary Salazar discusses the grazing plan developed to protect a wetland located on the Faulstich Ranch. Pictured with Secretary Salazar are Jim Faulstich and son-in-law Adam Roth, ranch owners/operators.

Bird tours (Figures 8 and 9) were hosted by the South Dakota Grasslands Coalition in partnership with the SD Ornithological Union on working ranches during the project period. The first of the tours hosted during project segment 3 was the 2011 tour was held near the White Lake in the eastern-central part of the state. Species counted totaled 57. The 2012 tour was held in the near Belle Fourche in the western part of the state. Drought, windy conditions and 40 degrees temperatures contributed to only 30 of species being identified. The 2013 bird was held near Montrose in the southeastern part of the state. Forty-two species were count. While attendance at the 2010 event was the lowest since the annual event was initiated during 2008, participation in the 2012 and 2013 events were essentially equal to two of the three previous events.

Figure 8. Jeff Smeenk looks for birds during the 2012 Bird Tour at his ranch in western SD.

Figure 9. KC Jensen, SDSU Professor of Wildlife, demonstrates bird banding.

Workshops

During project segment 3, the South Dakota Grasslands Coalition and the Grasslands Management and Planning Project sponsored three Holistic Management (HM) courses attended by 45 livestock producers and resource managers. Added to the 21 HRM workshops attended by 759 individuals, the number of workshops sponsored and total attendance equals 24 and 804 respectively.

The two 2011classes courses were taught by Terry Gompert a University of Nebraska Extension Educator with expertise in grazing education. Prior to his passing during April 2011, Gompert was practicing holistic management of his cow herd and ranch located near Center, Nebraska, and was certified Holistic Management Educator.

The 2012 class was taught by Josh Dukart, a livestock producer from Hazen, ND. Dukart is a Certified Educator of Holistic Management. He speaks and teaches regularly throughout the United States and Canada.

Project Staff and Chairman Faulstich are were invited to a Regional Sustainability workshop organized by the World Wildlife Fund and National Cattleman's Beef Association (NCBA) as a contractor to the Beef Check off. The workshop, scheduled for September 2013, is designed to:

- foster relationships and collaboration, create understanding of perspectives and challenges, and discuss potential opportunities for the future with a vision of understanding and promoting sustainability by,
- bringing together an audience consisting of a cross section of the food supply chain and engage the participants in dialogue and information-sharing about current sustainability efforts, how ranchers and companies throughout the supply chain view sustainability, and the challenges and needs of upstream producers and downstream users.

The agenda for the three day 2013 workshop, which will be held after the end of the current project segment, follows:

- Day 1 - Evening: Welcome, introduction to sustainability trends and issues, participant discussions on sustainability definitions
- Day 2 - Full Day: Field tour, local collaboration panel
- Day 3 - Morning: Field tour, supply chain perspectives panel, looking to the future, adjourn

. The sponsoring partners plan to host a similar workshop in South Dakota during 2014.

Grazing Schools

Agencies and organization involved with developing and hosting the South Dakota Grazing School included representatives from several natural resource agencies and organizations. Among these were:

- SD Grasslands Coalition,
- SDACD,
- SDSU and the SD Cooperative Extension Service,
- DENR,
- SD Department of Agriculture,
- NRCS and
- US Fish & Wildlife Service-South Dakota Partners for Fish & Wildlife.

The goal school's, established prior to the first school held during 2003, was:

> "Through an annual Grazing School provide grassland management training to grassland managers and grassland specialists to increase acres of sustainable grassland management resulting in the reduction of sediment, nutrient, and bacterial contamination of South Dakota waterbodies."

To meet the needs of livestock producers and resource management agency personnel the school's curriculum is evaluated and updated annually. Following the 2006 school which was attended by fewer than anticipated grassland managers, the vision statement (see below) was developed to guide the continued updating of school's curriculum to remain relevant to producers needs.

> "Give the grazing lands managers of South Dakota the tools to maintain healthy prosperous families, and diverse ecosystems, and profitable livestock operations while contributing to the well-being of communities."

The development of activities that carry out the mission and vision has resulted in:

- attendance at the schools offered filling available slots (Table 11),
- NRCS requiring attendance for participation in the agency's Grazing Sustainability Incentive Program (GSI),
- individuals attending the school requesting the addition of an alumni event to provide "graduates" with an opportunity to refresh skills learned and acquire information to further improve their grazing management capabilities and
- the SD Farm Bureau including attendance at the school in its BeefSD curriculum.

Table 11. Attendance at Grazing Schools.

School Number	Date	Attendance
1	September 2003	36
2	September 2004	28
3	September 2005	23
4	September 2006	18
5	September 2007	24
6	September 2008	26
7	September 2009	28
8	September 2010	64
9	September 2011	55
10	September 2012	46
11	September 2013	25
Total		373

The eighth through the tenth South Dakota Grazing Schools was held in Oacoma, SD. The 11th school field site was relocated to South Dakota Game, Fish & Parks land north of Chamberlain, SD. Twenty-seven grasslands managers participated in the two and one-half day school. Students learned pasture allocation (Figure 9), grassland and natural resources management (Figure 10), grazing and watering systems, year-long grazing and nutritional needs of livestock.

NRCS requires that SD participants in the agencies Grazing Sustainability Incentive program (GSI) attend the South Dakota Grazing School. Because of increased attendance stemming from increased participation in GSI program, two grazing schools were held during2010, 2011 and 2012.

NRCS requires that SD participants in the agencies Grazing Sustainability Incentive program (GSI) attend the South Dakota Grazing School. Because of increased attendance stemming from increased participation in GSI program, two grazing schools were held during 2011 and 2012.

A second school was held during 2012 for participants in the BeefSD program. BeefSD is a SD (SDSU) Cooperative Extension program offered in partnership with the SD Farm Bureau. The three year course is designed to provide beginning beef producers "the opportunity to expand their knowledge of the cattle industry as a whole, evaluate various production systems, and develop goals and management plans for their beef business." Because of an earlier than normal harvest and drought conditions only 20 people of the Bureau's first class of participants from 35 operations located across the state were able to attend the school. To learn more about BeefSD visit:

http://www.sdfbf.org/public/449/all_about_agriculture/beefsd

Figure 10. Grazing school participants double check size calculations before enclosing a paddock.

Figure 11. Dave Steffen (right), retired NRCS Rangeland Specialist, helps school participants learn how to identify grassland plants.

Presentations

During segment 3, project staff and partners made 20 project related presentations (Table 12) to a total audience of 1,418 and the cumulative number of presentations and total audience to 76 and 4,863 respectively. Presentations made during calendar year 2010 prior to the segment 3 start date are listed for information only and are not included in the numerical data for segment 3.

Coalition leadership had determined that ability to attract members and attendance at the annual meeting was judged as less than needed to sustain its current level of activity for the long term. To address the concern(s), a road show concept was implemented as a mechanism to:

1. transfer managed grazing information and
2. bolster interest/membership in the Coalition.

The 2011 and 2012 road shows visited four locations each year. At each stop, the feature attraction was a presentation by a recognized grazing authority. During the event, information about the Coalition and how its activities benefit producers was also provided. As a result of the road show:

1. attendance/involvement at the annual meeting increased several fold each year,
2. increased awareness of grassland resources and requests for information and
3. linked to the increase in the number of grazing systems

Table 12. Project Related Presentations.

Year	Event	Location	Attendance
2010*	Rancher's Workshop	Mission, SD	145
	Farm/Home Show	Webster, SD	35
	GLC Annual Meeting	Oacoma, SD	57
	Winter Range Camp	Isabel/Bison, SD	70
	Sisseton-Wahpeton Oyate Grazing Workshop	Sisseton, SD	53
	Innes Workshop	Chamberlain, SD	55
2011	Black Hills Stock Show	Rapid City, SD	60
	SD Academy of Science	Oacoma, SD	35
	Pheasant Forever Farm Bill Biologists meeting	Chamberlain, SD	8
	Winter Road Show with Jim Gerrish/Annual Meeting	Bison Mobridge Chamberlain Milbank	55 39 70 35
2012	Rancher's Workshop	Miller, SD	41
	Everglades Headwater Refuge Announcement	Haines City, Fl	150
	White House Conference on Conversation	Washington, DC	600
	Tom Noffsinger-Low Stress Cattle Handling Class	Pierre, SD	45
	Winter Road Show with Kathy Voth/Annual Meeting	Hot Springs Murdo Chamberlain Brookings	20 9 60 30
2013	Curt Pate-Cattle Handling workshop	Chamberlain, SD	36
	Gerald Fry-Beef Reproduction Workshop	Hamill & St. Onge, SD	40
	Land EKG Workshop	New Underwood, SD	15
	Winter Range Camp	Isabel/Bison, SD	70
Total			**1,418***

*** 2010 presentations made prior to start of project period, Not included in total**

The 2011 road show speaker was Jim Gerrish. Gerrish's credentials include more than 20 years of beef-forage systems research and outreach at the University of Missouri, as well as 20 years of commercial cattle and sheep production on a family farm in northern Missouri. The University of Missouri - Forage Systems Research Center rose to national prominence as a result of Gerrish's leadership. His research is the basis for many aspects of the understanding of plant-soil-animal interactions and provides the foundation for many of the basic principles of Management-intensive Grazing. Retired from the University, Gerrish continues to share his managed grazing expertise as a private consultant.

Kathy Voth was the 2012 road show speaker. When cattle producers expressed reluctance to include goats in their operations, Ms. Voth hypothesized they could use cattle to manage weeds and brush. Using decades of research findings by Utah State University, and animal behavior researchers, she developed a process for teaching cows to eat weeds and other non-traditional forages.

Ms. Voth has been selected bring her "Landscape for Livestock" presentation to SD to the 2013 road show which is scheduled after the end of this project period.

Publications/ News Articles

The project sponsor continued the use of print as a medium to convey information about managed grazing and provide opportunities for involvement in project activities. While the use of news releases

was continued as mechanism conveying opportunities for involvement to a wider audience, the use of other publications was initiated to reach livestock producers, the projects primary customers.

Publications

During 2012 and 2013, The SD Grasslands Coalition partnered with the SD NRCS to produce a grazing planner (Figure 12). The calendar format planner has illustrations of grazing management BMPs and indicates dates at which grazing management plans and changes should be considered.

A 2014 planner will be produced in partnership with the World Wildlife Fund and South Dakota Department of Game Fish & Parks.

Figure 12. Planner illustrations practice information to help grassland managers better manage the resource.

Range & Pasture Journal, a 12-16 page insert distribution in the *Cattle Business Weekly,* initiated during project segment 2, was continued through 2013. Seven issues were published during segment 3 in partnership with the Nebraska Grazing Lands Coalition**.**

Greener Pastures a grazing guidebook published during project segment 1 continues to be distributed at events. The publication is also available upon request by contacting project staff at:

jjessop@sdconservation.org

Print Media

Press releases, articles and inserts published during project segment 3 are listed in Table 13. The publication, subject and circulation of the publication are included in the table.

The 35 articles listed bring the total to more than 70 articles and inserts about the project and project related activities printed by more than 20 newspapers and agricultural trade papers with a combined circulation for all publications and articles printed of more than 2 million.

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Table 13. Project Related News Articles.

Date	Publication	Subject	Type	Circulation
2010				
October	*Cattle Business Weekly*	Range & Pasture Insert	Insert	10,000
December 8	*Cattle Business Weekly*	Leopold Award - Doud	Article	10,000
December	*Dakota Farmer*	Leopold Award - Doud	Article	30,000
December	*Land & Livestock*	Leopold Award - Doud	Article	3,900
2011				
January 3	*Argus Leader*	Leopold Award - Doud	Article	38,000
April 1	*Quality on Tap*-SD Rural Water Magazine	Leopold Award - Doud	Article	1,672
April 9	*Dakota Farmer*	Leopold Award - Doud	Article	30,000
April 20	*Cattle Business Weekly*	Range & Pasture	Insert	10,000
April 30	*Argus Leader*	Secretary Salazar Visit	Article	38,000
May 6	*Tri-State Neighbor*	Secretary Salazar Visit	Article	28,000
June	*Cattle Business Weekly*	Range & Pasture	Insert	10,000
September 21	*Central Dakota Times*	Grazing School	Article	2,900
October 1	*Cattle Business Weekly*	Range & Pasture	Insert	10,000
2012				
January 4	Minneapolis *Star Tribune*	Land Conversion	Article	297,478
January 4	Miami Herald	Land Conversion	Article	498,312
April 11	*Cattle Business Weekly*	Range & Pasture	Insert	10,000
June 30	*Cattle Business Weekly*	Range & Pasture	Insert	10,000
June 27	*Tri-State Livestock News*	Bid Tour – Davis and Smeek	Article	7,000
October	SD Farm Bureau Ag Leader	Leopold Award - Kopriva	Article	10,001
December	Farm Forum (Cattlemen's Roundup)	Leopold Award - Kopriva	Article	25,000
2013				
January 2	Ipswich Tribune	Trees	Press release	774
January 2	Parkston Advocate	Trees	Press release	1,114
January 2	Tripp Star	Trees	Press release	399
January 25,	*Tri-State Neighbor*	Northern plains Beef conference - Perman & Slovek	2 Articles	28,000
April 24	Seattle Post Intellinger	Leopold Award	Press release	208,000
April 25	Rapid City Journal	Leopold Award	Article	25,000
May 1	Dakota Farmer	Leopold Award	Article	30,000
May 2	Rapid City Journal	Leopold Award - Guptill	Article	25,194
May 8	SD Weed & Pest newsletter	Story about Kathy Voth	Insert	10,000
May 6	Capitol Journal	Leopold Award - Guptill	Article	3,888
May	Dakota Farmer	Leopold Award - Guptill	Article	30,000
May 13	Farm Forum	Leopold Award - Guptill	Article	37,135
June 26	Tri-State Neighbor	Bird Tour	Article	28,000
July 12	Tri-State Neighbor	Leopold Award - Guptill Tour	Article	28,000
Total				**1,535,767**

Much of the circulation increase during the project period can be attributed to the conservation and Leopold Award articles that appeared in major market newspapers:

- Minneapolis Star Tribune,
- Miami Herald and
- Settle Post Intellinger

Articles in papers (combined circulation of 1,003,790) such as these are important to connecting the urban population to the relevance and need for farm bill programs that conserve natural resources and promote environmental health of the nation.

Electronic Media

Eight radio project related interviews were broadcast since the project was initiated. The use of Twitter was initiated during 2012. Stations and tweets completed during project segment 3 were:

- KWAT, Watertown
    1. Market Share = > 12,000
    2. 2010 SD Leopold Conservation Award; interviewed Perman, Faulstich and Doud
    3. 2012 Leopold Conservation Award winner; interviewed Kopriva and Faulstich.
- *Dakota Farm* Talk
    1. aired on 13 stations starting March 2012
    2. audio clips provided to more than 200 (mostly SD Ag and rural Leadership students and graduates (http://www.sdagleadership.cm)
    3. SD Grasslands Coalition has one time slot per month. to present grasslands related information.
- *KELO Land*
    1. Newscast statewide coverage – market share = 250,000
    2. Leopold Award
- *Twitter*(Number Tweets/accesses)
    1. Ducks Unlimited Website April 30, 2011- Secretary Salazar Visit (70,300)
    2. SD NRCS Website
        - June 30, 2012 – SD Bird Tour (291)
        - June 30, 2012 – SD Bird Tour (3,162)
        - May 1, 2013 - Leopold Award; Jesse Bussard (4,673)

Videos produced during previous project segments continue to be use as informational/train tools. These include:

- Segment 1 - Five part program for television (*Today's Ag)* video provides the information about managed grazing and how the practice protects the environment while improving producer profitability. NRCS shows the video in their introductory range planning classes. The video may be viewed by clicking on "Grassland Management Video" after accessing:

  http://www.sdgrass.org/items of interest/grasslands.mp4

- Segment 2 - 2007 grazing school aired on *Today's Ag* and *Ag Day/US Farm Report*, and 2009 ESPA Award to Faulstich family aired RFD TV's on *Cattlemen to Cattlemen* program.

A summary of outreach activities completed during project segment 3 with a comparison of the purpose for the activity versus the result is shown in Table 14.

Table 14. Summary of Outreach Activities.

Activity	Coverage/Distribution	Purpose	Result
Existing Demonstration sites	Sites at Highmore and Geddes maintained;	Continue to showcase grazing alternative and promote project involvement	Showcase results of adopting grazing practices that protect the environment and improve operation sustainability.
New demonstration and Riparian site	Southeastern SD	Expand opportunities for livestock producer to visit a system and highlight grazing impacts and riparian management	New demonstration site in eastern SD; Data was acquired to evaluate grazing impacts on vegetation and NPS.
Websites (SDADC & SDGLC)	State Wide	Project awareness	Project awareness increased; recognition of SDGLC as the voice for grazing lands in SD; SDGLC invited to join Ag Unity.
Display Board	Shows and workshops	To highlight Project and Coalition activities	Display used at events - increased environmental and economic value" of managed grazing awareness – esp. among urban and decision marker sectors.
Grazing School	Statewide	Grass management ideas and networking with other producers and grass managers	165 producers assisted with planning, installing or improving grazing systems.
Print and Electronic Media	Statewide	Project awareness & happenings	Increased project awareness among urban and decision maker sectors and attendance at project sponsored events such as tours and grazing schools which resulted in development of grazing systems and installation of grazing related practices/BMPs.
Tours	Statewide	Increase project awareness, ownership, support, and participation; availability of cost share for BMP installation	Antidotal information indicates a positive effect relative to increasing participation in other project sponsored events or the installation of grazing practices.

Objective 3: Monitor and evaluate project progress toward the attaining the project goal realized by implementing the practices selected to reach the objectives established for this project segment.

Task 3. Ensure all activities, reporting requirements, personnel actions and financial obligations associated with the project are completed, and terms of all agreements complied with as outlined in implementation plans, grant and contractual agreements, memoranda of understandings, any state and federal reporting requirements, and the Coalition's by-laws.

Product 4. Reporting and project management will be completed using a management agreement with the SD Association of Conservation Districts for project management and administration.

The management agreement with SDACD initiated during 2001 was continued through the project period. Under terms of the agreement, SDACD provides administrative, financial, and personnel management services. A project advisory committee with representation from each party to the agreement meets periodically to review project progress, rank requests for assistance, and provide direction to the Association.

The functions of the advisory committee formed during project segment 1 to keep the coalition's project partner agencies and organizations appraised of project activities, recommend future activities and coordinate joint efforts was assumed by the coalition board of directors during project segment 2 was continued. The decision to accomplish the committee functions in this manner was based on several considerations related to the questionable need to bring the group together for a meeting to discuss what had been accomplished at another meeting involving the same organizations and agencies. Examples of such meetings are the partner's meetings host by the NRCS state director and meetings of the grazing school planning group.

Milestones:

Project Segment 3- Planned – Employees and consultants hired and supervised
Accounting completed to meet federal grant requirements
3 Annual project progress reports (October 2010, 11, and 12).
1 Final project progress report (July 2013).

Accomplished - Employees and consultants hired and supervised.
Accounting completed and requirements met as notified by DENR and the grant agreement.
Annual progress reports completed as required.
1 Final project report completed (February 2014).

MONITORING AND EVALUATION

Project monitoring will be completed by a team consisting of:

- the project coordinator,
- seasonal employees and/or interns working during the summer,
- grassland managers/producers,
- SDSU, Animal and Range Science Department staff (Outreach Coordinator) and
- other Advisory Team members and other project partners.

The data collected was stored and managed by the project staff under the direction of the project coordinator. The project used participating producer and partners' expertise and equipment for data storage and analysis. Water quality data was forwarded to DENR or the volunteer monitoring program for entry in the STORET database. QAQC for all water quality monitoring aspects of the project will be provided by DENR.

The information collected was used by the SD Grassland Coalition to complete annual (October) reports of project activities, provide a copy to all project partners and funders and prepare the final report.

Mid-year reports were not required as the project was on schedule.

Evaluation of success in reaching the project goal was accomplished by monitoring project activities to measure:

- meeting established milestones,
- effects on water quality and vegetation parameters, and
- contributions to improving sustainability of grassland managers operations.

Overall, project success was evaluated based on the monitoring data as an indicator of grassland improvement as an effective BMP to protect/improve water quality and the profitability of the owner's operation.

Monitoring Activities

Project activities were monitored and evaluated relative to project milestones. The information collected included:

- acres of grazing plans developed,
- acres of grassland management plans implemented,
- units of conservation practices installed to develop the grazing systems,
- project accounting (expenditures, receipts, matching funds and their sources),
- location of operations assisted and demonstrations sites using GPS and entry into a GIS data base,
- load reductions realized from the systems developed and
- evaluation of workshops/schools sponsored to determine if the activity in helping attain the overall project goal.

The data collected is included in the Project Goals, Objectives and Tasks Section of this report by product.

Evaluation

The data collected through monitoring activities indicate that:

- most project milestones were met or exceeded,
- the outreach component of the PIP was successful in transferring information about and increasing participation in the project,
- there is support for managed grazing as an effective environmental practice by conservation and nature groups such as the Sand Country Foundation, Ornithologists and the World Wildlife Fund and
- managed grazing practices reduce NPS pollution to surface waterbodies.

See next section for load reduction information.

Data collected at riparian demonstration sites in eastern and western South Dakota provided evidence that management practices that entice livestock to drink from sources other than the riparian area are beneficial to water quality.

Results from rainfall simulation show that:

- runoff, sediment yield and nutrients entering eastern South Dakota streams from pasturelands is likely quite low whereas in western South Dakota, runoff and sediment can be significant during intense rainfall periods leading to gulley erosion, and that
- proper stocking rates leading to good vegetation and litter cover are important to enhance infiltration and reduce runoff.

Data collected at eastern SD demonstration sites during project segment 2 suggest that;

- livestock grazing of riparian pastures in eastern South Dakota, does not impact sediment loading from the surrounding uplands,
- the use of vegetation is was fairly even across the pasture monitored as indicated fusing vegetation measurements at different distances from the stream,
- as riparian pasture size was relatively small at the eastern South Dakota locations, livestock distribution tends to be even across the pasture, and
- cattle tend to not overgraze near the stream, possibly because vegetation is not as palatable and/or hummocky terrain deters livestock from over using these areas,

To minimize stream bank erosion and reduce direct access to streams by livestock, alternative water sources, rock crossings, and fencing could be effective strategies. Fencing out wide buffers alongside the stream may not be necessary.

LOAD REDUCTIONS

Load reductions realized from the systems grazing installed (Table 15) were determined using the Spreadsheet Tool for Estimating Pollutant Loads (STEPL) developed by EPA Region 5. The load reductions achieved were:

- entered in the DENR project management system (Tracker),
- provided to watershed project coordinators for use in determining total daily maximum load (TMDL) implementation and
- included in annual reports prepared using the format provided by DENR to facilitate entry into EPA's Grants Reporting and Tracking System (GRTS).

Table 15. Load Reductions Realized From Grazing Systems Installed.

NPS Pollutant	Load Reduction	
	Project Segment 3	Cumulative
Nitrogen (lbs)	294,719	604,416
Phosphorus (lbs)	53,976	109,968
Sediment (Tons)	36,226	68,863

During project segment 3, the TMDL watershed assessment and implementation projects provided load reduction data for the 62 drainage areas that follow bring the total drainage areas to 80 for segments 2 and 3.

Reductions in the 18 HUCs that follow were provided during project segment 2.

Lower West Fork Elm Creek
Johnny Creek-White River
Deer Creek-Belle Fourche River
Upper Hermaphrodite Creek
Center Pearl Creek
Lower Four Mile Creek
Duck Creek
Jamesville Colony-James River
Lower South Chapelle Creek
Mule Creek
Upper Spring Creek
Powell Creek
Alkali Creek
Kennebec Lake-Medicine Creek
Park Slough
Spring Creek-Red Owl Creek
Deer Creek-Belle Fourche River
Lower Shaefer Creek

Reduction in Drainage Areas provided during Project Segment 3. For reductions in each of the drainage areas listed visit:

http://www.epa.gov

Then search SD TMDL Implementation Projects.

Battle Creek
Blue Blanket Lakebed
Brookfield Creek-Big Sioux River
Brule Creek
Buffalo Creek-Lake Oahe
Bull Creek-Belle Fourche River
Cedar Canyon-Moreau River
Chapelle Creek
Cottonwood Creek-Grand River
Cow Creek
Crow Creek-Missouri River
Deadman Creek-Lake Oahe
Elm Creek
Emanuel Creek
Enemy Creek
Firesteel Creek
Hamak Lake
Hiddenwood Creek
Lance Creek
Little White River-White River
Long Lake
Lower Elm Creek
Lower Little Minnesota River
Lower Medicine Creek
Lower Oak Creek
Lower Platte Creek
Middle Choteau Creek
Middle Elk Creek
Middle Medicine Knoll Creek
Middle Rabbit Creek
Moreau River Bay
North Wolf Creek
Oak Creek-White River
Pierre Creek
Pine Creek-Little White River
Platte Creek-Missouri River
Plum Creek
Randall Creek-Missouri River
Red Lake
Riverview Cemetery-Big Sioux River
Rock Creek
Rosebud Creek-Little White River
Sand Creek
Six Mile Creek
Smith Creek
Swan Lake
Twelve Mile Creek
Unnamed tributary to Spring Creek
Upper Medicine Creek
Upper Platte Creek
Upper Ponca Creek
Upper Preachers Run
Upper Redwater Creek
Upper Snake Creek
Upper Spring Creek
Upper Thunder Butte Creek
Upper Wolf Creek
Upper-North Fork Snake Creek
Whetstone Creek-Missouri River
White Thunder Creek
White Thunder Creek-White River
Wolf Creek

BEST MANAGEMENT PRACTICES DEVELOPED OR REVISED

While the development and/or revision of best management practices was not included in or added to the project implementation plan, monitoring activities:

- documented the effectiveness of the BMP as a NPS reduction tool for livestock producers,
- provided information regarding the placement of practices to achieve reduction of nutrients, sediment and fecal coliform bacteria loads to TMDL waterbodies and
- increased the acceptance of managed grazing by not only livestock producers but also environmental organization such as the teachers, birders, wildlife community.

RELATIONSHIP TO MANAGEMENT PLAN

Activities completed during the project period supported attaining the goal of the SD NPS Program as outlined in the SD NPS Management Plan. Examples of support provided by the Segment 2 and the cumulative activities of all project segments of the Grazing Management and Planning Project include but are not limited to the following SD NPS Management Tasks:

Task 4 – Implement TMDLs within two years of completion.

The Grassland Management and Planning Project is a statewide effort that provides grazing management BMPs planning and implementation assistance in watersheds where TMDLs are being implemented and developed. The technical assistance and outreach activities provided by the Grasslands project is a resource local project planners and implementation coordinators can access to move TMDL implementation projects toward completion within the two year window.

- Tasks 5 – Maintain working relations with financial and technical assistance partners.

  The project PIP was structured to promote the development and use of partnerships that include resource management agencies, industry, environmental organizations, the academic community and cooperative extension service to plan and implement BMPs.

- Task 8 – Implement clusters of TMDLs on a 12 or 8 digit Hydrologic Unit Codes (HUCs).

  The project provides services across eight digit Hydrologic Unit (HUC) boundaries. See Load Reduction section of this report for HUCs and drainage areas where BMPs have been installed. Therefore, the project supports the implementation of TMDLS in 8 and 12 digit clusters.

- Task 10 – Implement multiple TMDLs for several waterbodies across county and conservation district boundaries using financial and technical assistance from federal, state and local project partners to expand the TMDL implementation capabilities of the SD NPS Program.

  During project segment 3 project staff planned and implemented grazing management BMPs in 35 counties in partnership with local, state and federal agencies and organizations. The cumulative total of counties for all project segments equals 39. See Tables 1 - 4 and Figure 4.

- Task 12 – Develop and implement an outreach program that provides information and participation opportunities through partnership.

  The project complements DENR and other watershed partner outreach and education program. Outreach activities completed (Tables 7 – 13) have resulted (Table 14) in the acceptance and implementation of BMPs that reduce NPS pollution while increasing profitability. The SD project and its sponsor have gained recognition of resource management and environmental agencies organizations as a program that "gets results".

- Task 14. –Annual GRTS reports with load reduction data.

  GRTS reports with load reduction data were provided to DENR for use in meeting 319 Program reporting requirements. The reductions were calculated using the Spreadsheet Tool for Estimating Pollutant Loads (STEPL)

COORDINATION AND PUBLIC PARTICIPATION

Coordination

Project activities were directed by a project coordinator provided through a management agreement with SDACD. The coordinator was responsible for producer assistance, tour leadership, and assistance at the grazing school**.** The coordinator's activities were completed with supervision provided by SDACD and policy direction from the SDGLC board of directors.

In setting policy and program direction, the coalition board used input from partner agencies and organization. As indicated previously in this report, input and coordination of efforts between the partners was accomplished at resource meetings scheduled by partner agencies for similar purposes.

Coordination efforts to develop and review the accomplishments of cooperative agreements with partner agencies and groups were completed by direct interaction with the partner(s) who were party to the agreements. Among the partners with which the coalition had formal or informal cooperative agreements during the project period were:

- NRSC,
- USFWS,
- SD GF&P,
- SDSU,
- SD Discovery Center and Aquarium and
- SD Farm Bureau

See Table 16 for a comprehensive list of project partners and their contributions to project success.

Public Participation

Public participation was encouraged using the activities completed to implement the project outreach and information transfer program (Objective 2). The activities included:

- workshops,
- grazing schools,
- news releases,
- tours and
- field days

Refer to Tables 7 – 14 for summaries of the activities listed above.

Table 16. Project Partners Contributions.

Agency/Organization	Contribution
Nongovernmental	
SD Association of Conservation Districts	Provided interim coordinator through contractual services; technical assistance for administration and BMP planning through the 319 funded Watershed Planning and Assistance Project.
SD Ornithological Society	Organization and hosting bird tours.
SD Discovery Center and Aquarium	I & E mini grant for the Leopold Award
SD Farm Bureau	Grazing School for BeefSD program participants
World Wildlife Fund	Grazing Calendar cosponsor
Governmental	
Local	
Conservation Districts	BMP planning and installation.
State	
SD Department of Agriculture	Financial assistance for BMP installation and technical assistance to conservation districts.
SD DENR	Technical assistance and training with water quality sampling and data interpretation, project management and BMP installation through the 319 Program. Financial assistance for water quality sampling through the use of fee funds; Consolidated Water Facilities Construction Fund grant for AWMs.
SDSU and SDSU Cooperative Extension Service	Project management and coordination; demonstration site establishment and monitoring and outreach activities.
Federal	
Crow Creek Sioux Tribe	Project participation
Lower Brule Sioux Tribe	Grazing School Field Exercise Location.
US EPA	Financial through Clean Water Act Section 319
USDA FSA	Financial assistance for BMP installation through the CRP Program.
USDA NRCS	Financial and technical assistance for BMP installation through the EQIP Program.
USDI FWS	Technical assistance for implementation of grassland seeding, grazing systems, multiple purpose ponds and riparian fencing Partners for Fish and Wildlife Program.

RECOMMENDATIONS

Aspects of the Project That Did Not Work Well

Maintaining the web site, to include a host organization may need to be revisited to address accessibility and maintenance concerns and use decline during the project period. However, use concerns may not be an issue given:

- hits appear to be more directed to specific interests/needs and
- the use of Twitter appears to be a preferred option for an increasing audience.

Low attendance at the annual meeting had become a concern. This was addressed by incorporating the meeting into the road show initiated during 2011.

Recommendations

As evidenced by the increasing number of participants in outreach activities and demand for the technical assistance to provide grazing management assistance listed below, it is recommended theses activities should be continued.

- Persons attending the grazing school recommended continuing the activity and indicated they would encourage others to attend. In addition, attending the school is included in the BeefSD curriculum.
- The project conducted more than four times as many workshop and tours/field days than planned with a commensurate increase in attendance.
- The successes experienced by the project, its leadership and managed grazers has resulted in regional and national opportunities to reach a large urban and policy maker audience and thereby garner support for programs such as GSI and Sod Buster.
- Unsolicited producer requests for assistance and attendance at outreach events often exceeds expectations and often stretches both project and partner staff capacities to provide requested services.
- There is increased managed grazing interest in the east and south east areas of the state, a target area of concern prior to this project segment.

Based on the positive environmental and economic benefits realized from the activities completed during this and previous project segments, the continuation of support for the development and installation of managed grazing systems in SD is recommended.

PROJECT BUDGET AND EXPENDITURES

The project budget was amended during the project period to fund follow-up activities necessary to evaluate use of systems and assist producers with overcoming management skill and system design challenges encountered

The budget as amended with a comparison to actual expenditures appears in Table 17.

Table 17. Project Budget - Expenditures Comparison.

Item	BUDGET		EXPENDED	
	319	Other Funds	319	Other Funds
SALARY				
Outreach Coordinator	40,069		5,845	
Project Work Group		12,000		14,371
Range Consultant	115,000		129,015	
Range Specialist	2000,000	40,000	213,270	85,356
NON SALARY				
Audit/Compilation	1,500		13,920	
Cell Phone	1,500		2,268	
Computer Maintenance/Lease	1,900		2,598	
General Liability	1,000		3,600	
Postage	300		277	
Supplies	2,400		9,070	
Travel	31,470		45,137	
BMP IMPLEMENTATION				
Grazing Management Plans	17,500	192,750		271,893
TOTAL	425,000	244,750	425,000	371,620
MATCH				
Local Cash				153,166.55
Local In-Kind				132,071.15
Other State				1,025.00
Total				**286,262.87**
Federal Match-Farm Bill Technical Assistance Funds- Ineligible				85,355.58

CONCLUSIONS

As state previously in the evaluation component of this report, the data collected through monitoring activities indicate that:

- project milestones, except as noted, were met or exceeded, (see Table 18 below for comparison summary),
- the outreach component of the PIP was successful in transferring information about and increasing participation in the project,
- there is support for managed grazing as an effective environmental and sustainable agriculture practice by conservation and nature groups such as the Sand Country Foundation, Ornithologist and producer groups such as the Farm Bureau respectively, Union and World Wildlife Fund and
- The installation of grazing systems has gained acceptance in areas of the state where it was previously not readily embraced, i.e. the southeast.

Table 18. Comparison of Planned vs. Accomplished Milestones.

Milestone	Planned		Accomplished	
	Segment 3	Cumulative	Segment 3	Cumulative
Grazing plans developed (acres)	160,000	540,000	401,128	974,000
Grazing plans implemented (acres)	120,000	540,000	363,836	908,362
Fence (linear feet)	120,000	96,282	325,000	556,132
Pipeline (linear feet)	120,000	137,625	250,000	533,705
Wells(number)	4	10	0	5
Tanks (number)	40	95	69	217
Dugouts/dams (number)	6	18	3	9
Grass seeding	100	350	505	732
Demonstration sites (number)	0	9	0	12
Web site & hits (number)	1/30,000	2/180,000	2/47,567	2/340,655
Tours & field days/participation	2/NA	15/NA	12/915	60/3,190
Media events (number)	4	19	21	75
News Releases-electronic media	4	NA	22	37/1,945,000
News Releases- print articles		19	34	68/>2,490,000
Video	0	1	0	1
Workshops/participants	6/NA	15/NA	29/1,256	79/3,256
Grazing schools/participants	2/50	7/150	6/165	13/348
Administration & oversight	1	3	1	3

The project goal was attained.