SECTION 319 NONPOINT POLLUTION CONTROL PROJECT REPORT

WATERSHED PROJECT FINAL REPORT

CORSICA LAKE/LEWIS & CLARK LAKE WATERSHED IMPROVEMENT PROJECT SEGMENT I

By

Rocky Knippling
Project Coordinator
Randall RC&D Council

November 2009

This project was conducted in cooperation with the State of South Dakota and the United States Environmental Protection Agency, Region 8.

Grant # 998185-03, 06, 07

EXECUTIVE SUMMARY

PROJECT TITLE: Lewis and Clark Watershed Implementation Project Segment 1

GRANT # 998185-03, 06, 07

PROJECT START DATE: April 30, 2006

PROJECT COMPLETITION DATE: September 30, 2009

FUNDING:

Funding Sources	Original Budget	Actual Expenditures
US EPA Section 319 Grant	**$814,800**	**$814,800**
Conservation Commission	**$ 25,000**	**$ 589**
Consolidated Water Grant	**$130,000**	**$130,000**
USDA/NRCS/FSA	**$ 46,545**	**$445,304**
Local Cash and in-kind	**$352,520**	**$413,389**
Total:	**$1,368,865**	**$1,804,082**

Summary of Accomplishments

Project goal was to restore the beneficial uses of Lewis and Clark Lake watersheds (Table 1) through the installation of Best Management Practices (BMPs) that targeted sources of sediment, nutrients, and fecal coliform bacteria. The project was sponsored by the Randall RC&D with good support from agricultural organizations, federal and state agencies, and local government entities.

Project goals were based on water quality data collected during watershed and lake assessments that began during January of 2003. A final Total Maximum Daily Load (TDML) report for the Corsica Lake portion of the watershed was completed during 2005 and a project implementation plan (PIP) was drafted to install BMPs designed to reduce loading of nutrients, sediment, and coliform bacteria during June of 2006 for this watershed.

The TDML final report was completed for the remaining East River portion of the Lewis and Clark drainage during 2006. The project was expanded during 2007 to include the 747,000 acres represented in this area. An EPA 319 grant of $514,800 was added to the budget at this time for BMP development due to the increased size.

Producer and other organization requests led to another expansion of the project during 2008. The West River portion of the Lewis and Clark watershed and the Lake Andes watershed were brought into the project in this expansion. There was not an increase in funding for the addition of these two areas.

The BMPs selected for this project were primarily animal waste systems and the restoration of riparian areas. USDA programs of Conservation Reserve Program (CRP) and Environmental Quality Incentive Program (EQIP) were determined to be the most cost effective programs to use for reducing nonpoint source loads from the watershed. They were used extensively during this segment to assist with cropping, grazing, and animal waste projects.

Heavy producer interest and two million acres in the now expanded project led to the decision of adding a second coordinator, Wacey Kirkpatrick, during July 2009. This move was to help cover the large physical area and share in the work load of BMP implementations.

A steering committee was formed during 2007, with representation from 11 conservation districts and sponsoring federal and state agencies, to help facilitate efficient flow of cost effective BMPs and make sure all needs were being met.

Several producer meetings and outreach programs were implemented during this segment of the project. Producer meetings were held in Armour and Tyndall at the start of each phase and were well attended. A holistic grazing school was sponsored in Armour as well that had an impact in that area. Numerous brochures, direct mailings, and news articles were used to keep producers aware of practices that the project was involved with.

Table of Contents

List of Tables

List of Figures

Appendices

INTRODUCTION

Sediment accumulates in the Lewis and Clark reservoir at the approximate rate of 2600 acre feet per year. This is the equivalent of 1 square mile of mud 4.06 feet deep.

The Lewis and Clark Watershed Assessment was initiated during January of 2003 at the request of several local organizations that expressed concerns relative to sediment loading of Lewis and Clark Lake. The original scope of the project was intended to identify areas and causes of sediment entering the impoundment. The delta shown in the above picture was moving down the river at a steady rate. Figure 1 shows the projected delta movement over a period of years using existing data if action is not taken. The goal of the Lewis and Clark Implementation Plan is to restore the beneficial uses (See Table 1) of Lewis and Clark watersheds through the installation of Best Management Practices (BMPs) that target sources of sediment, nutrients, and fecal coliform bacteria.

Table 1: Beneficial uses for Lewis and Clark Lake.

Beneficial Use:	Lewis and Clark Lake	Corsica Lake	Dante Lake	Choteau Creek (Wagner to Mouth)
Domestic water supply waters	X			
Coldwater permanent fish life propagation waters				
Coldwater marginal fish life propagation waters				
Warm water permanent fish life propagation waters			X	
Warm water semi-permanent fish life propagation waters	X	X		X
Warm water marginal fish life propagation waters				
Immersion recreation waters	X	X	X	
Limited contact recreation waters	X	X	X	X
Fish and wildlife propagation, recreation, and stock watering waters	X	X	X	X
Irrigation waters	X			
Commerce and industry waters	X			

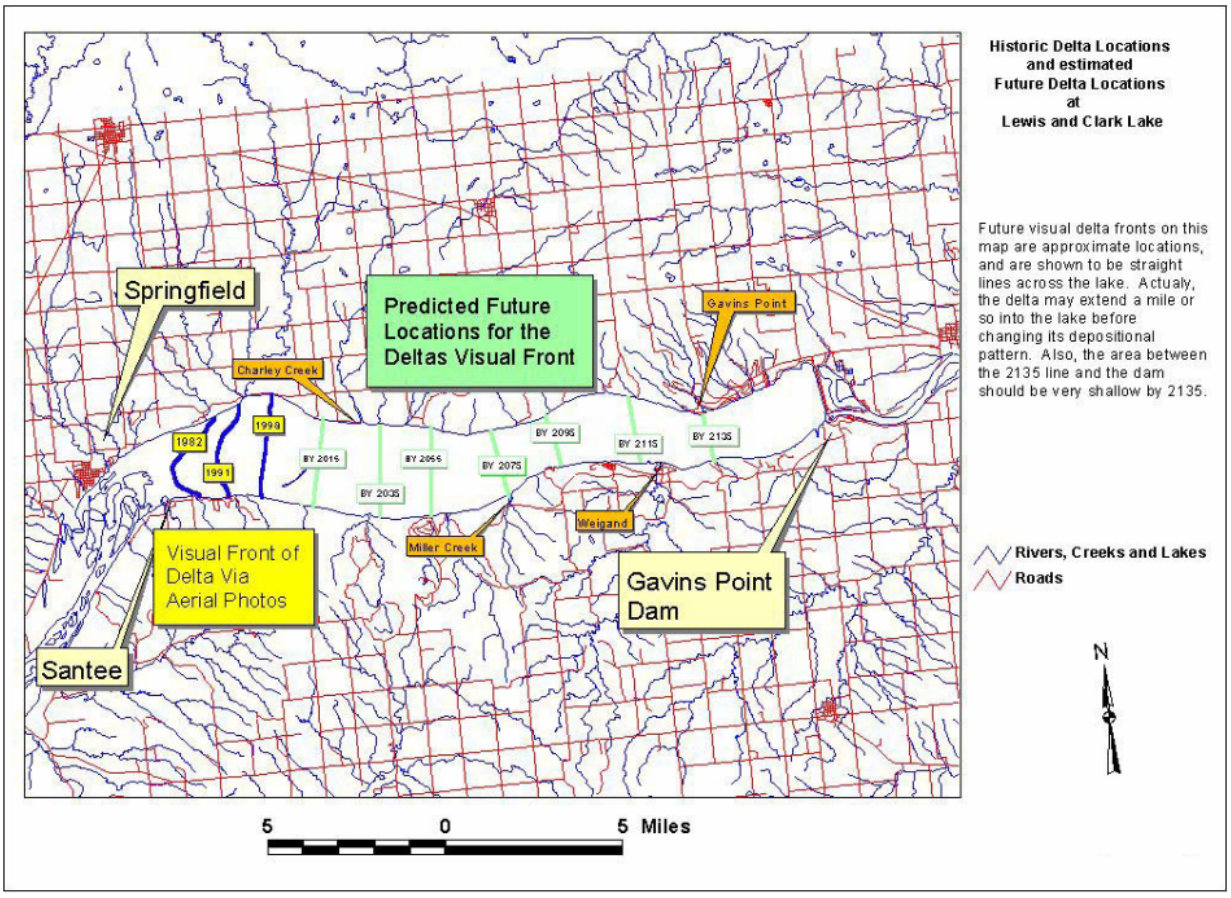


Figure 1: Sediment deposition for Lewis and Clark Lake.

Project Area

Lewis and Clark Lake is a man made reservoir on the Missouri River created by the earthen Gavin's Point Dam. It has a pool length of 25 miles, a maximum depth of 45 feet, and has a surface area of 31,400 acres. Major drainages into the reservoir include Emanuel Creek, Choteau Creek, Snatch Creek, and the Niobrara River (Nebraska). The western portion includes the watersheds of the Keya Paha River and Ponca Creek, which are both tributaries of the Niobrara River. Included in the project area are the 303d listed waterbodies and sub-watersheds of the Corsica Lake, Dante Lake, Lake Andes, Rahn Dam, and Roosevelt Dam.

The Lewis and Clark Lake Watershed encompasses several Hydrological Units (HUC's) to include the Keya Paha HUC# 1015006; Lewis and Clark Lake HUC# 10170101; Ponca HUC# 10150001 (See Figure 2 - Lewis and Clark Watershed Maps).

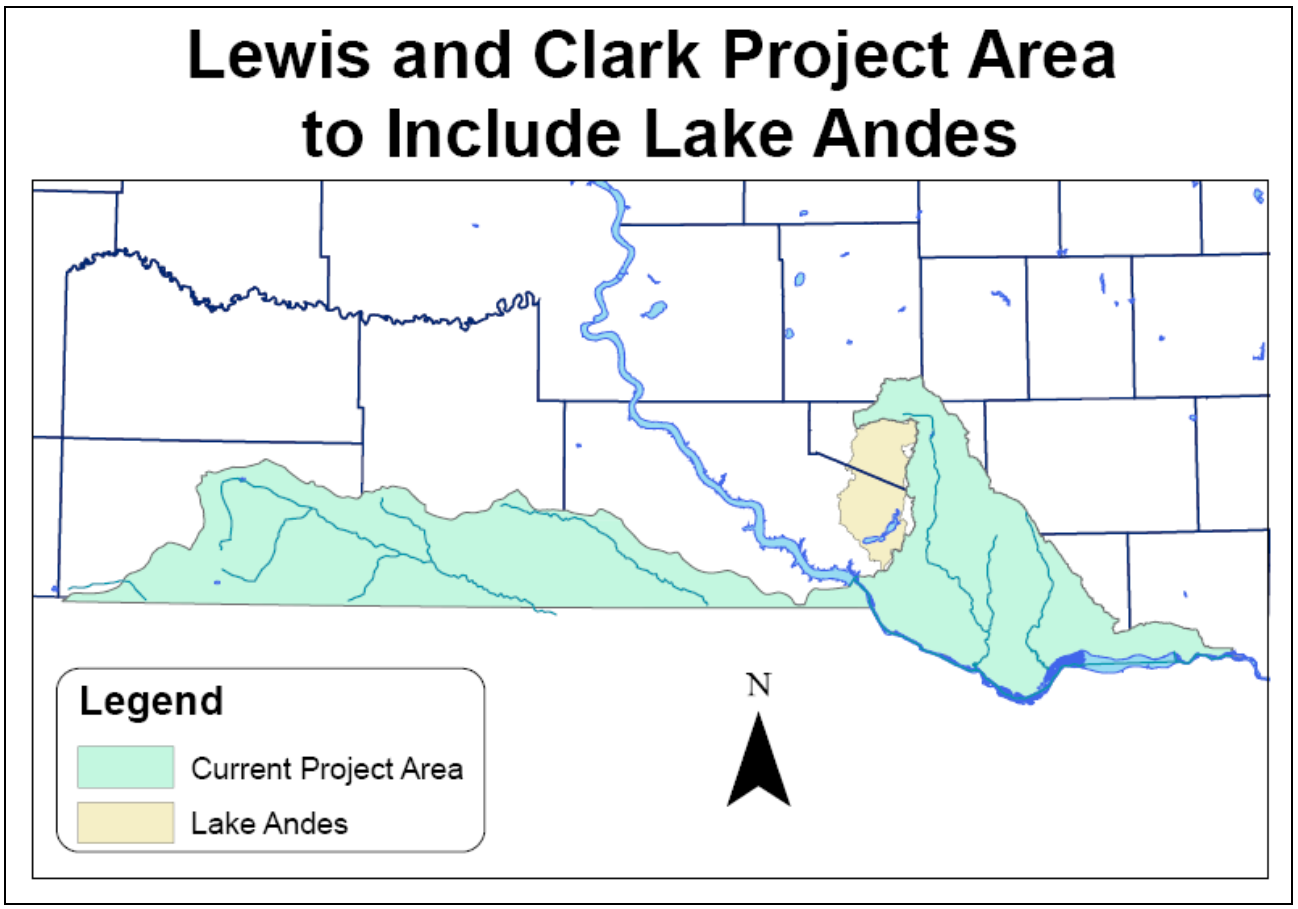


Figure 2: Lewis and Clark Project Area.

The makeup of land within the boundaries of the Lewis and Clark Watershed are predominantly agricultural lands although there are 15 urban sites located in the project area. The largest of these cities is Wagner (population 1675), Armour (782), Bonesteel (297), Burke (676), Colome (340), Corsica (644), Delmont (263), Gregory (1342), Herrick (67), Lake Andes (819), Mission (904), Springfield (792), Tabor (417), Tyndall (1239), and Tripp (711).

Waterbody Description

Corsica Lake

Corsica Lake is a man made impoundment created by an earthen dam across the upper section of Choteau Creek. The 56,038 acre watershed is located in south eastern Aurora County, extreme south western Davidson County, and north central Douglas County, South Dakota. Agricultural lands compose the watershed with 70% being cropland and the remaining 30% being rangeland. A sediment survey for Corsica Lake was completed during the winter of 2000. Water and sediment depths were determined throughout the lake to estimate/calculate the total amount of deposited material in the lake. A mean sediment depth of 3 feet and a mean water depth of 5.7 feet were recorded during the assessment, with a maximum depth of 11 feet.

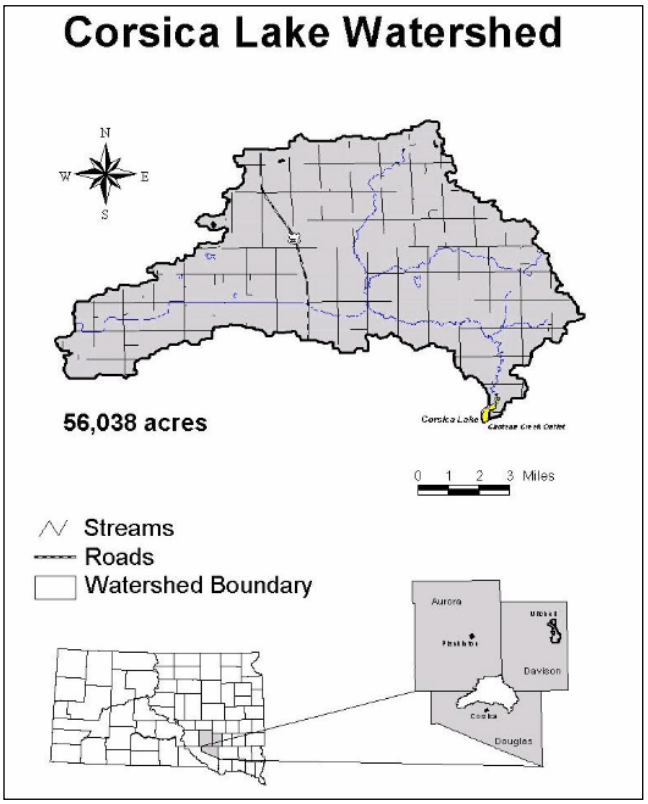


Figure 3: Corsica Lake Watershed.

Lake Andes

Lake Andes is a shallow prairie lake located in northern Charles Mix County; SD. Historically Lake Andes was a natural lake in a bedrock valley buried by mostly glacial till. The 141,000 acre watershed consists of mainly agricultural lands which 70% is cropland and 30% rangeland. Two county roadway dikes were constructed during 1938-39 that divide the lake into three units: North Unit, Center Unit, and South Unit. The North Unit receives most of its inflow from Andes Creek and an unnamed tributary. The North Unit has a maximum depth of approximately 7 ft at which the North Unit spills into the Center Unit through a culvert in the roadway dike. The Center Unit receives a majority of is inflow from the North Unit and two of the monitored unnamed tributaries. The Center Unit has a maximum depth of approximately 8 ft at which the Center Unit spills into the South Unit through the second roadway dike culvert. A majority of the South Unit inflow originates from the Center Unit and three monitored drainages.

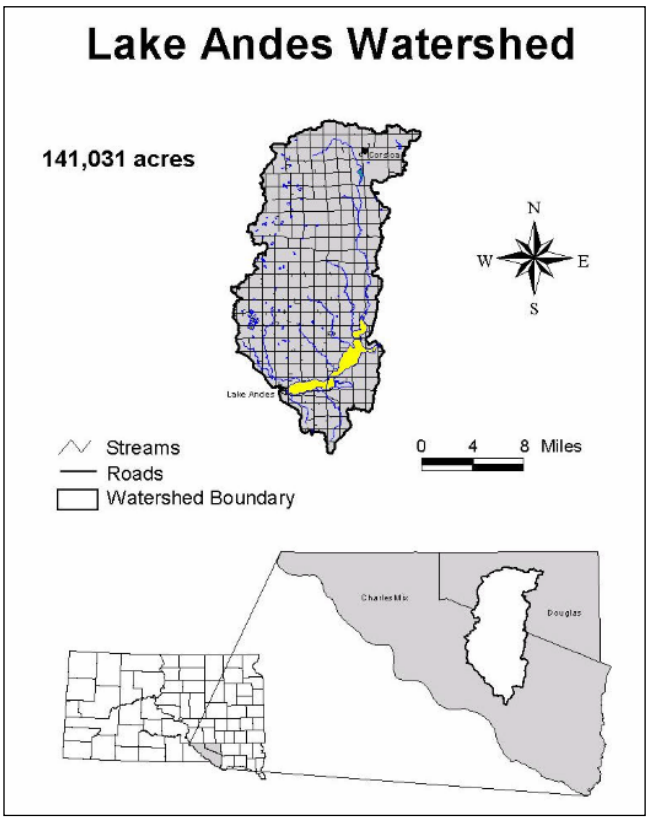


Figure 4: Lake Andes Watershed.

Keya Paha River

The Keya Paha River drains over 1 million acres in South Central South Dakota and discharges to the Niobrara River in Nebraska. The river receives runoff from agricultural operations and experiences periods of degraded water quality due to fecal coliform bacteria concentrations. The land use in the watershed is predominately agricultural consisting of cropland (42%) and grazing (57%), with the remaining 1% of the watershed composed of water and wetlands, roads and housing, and forested lands. These percentages are considered representative of both the watershed as a whole, as well as the drainage area immediately surrounding the listed segment. The contributing drainage area is composed of 17% Nebraska Lands, 50% Tripp County Lands, and 33% Todd County Lands.

The Keya Paha River was assessed as an individual portion of the larger Lewis and Clark Watershed Assessment which included individual streams such as the Keya Paha as well as the entire drainage basin and the cumulative effects of the individual waterbodies.

Ponca Creek

The Ponca Creek is a tributary of the Niobrara River. The 300,000 acre watershed encompasses East Central Tripp and Southern Gregory County in South Dakota. Agricultural land dominates the drainage with percentages being similar to the Keya Paha of 40% cropland and 60% grazing lands. Initial assessment is still ongoing for this stream; however, BMPs are being installed presently to reduce sedimentation and fecal coliform bacteria. The stream was listed during April, 2003 for both Total Suspended Solids and Fecal Bacteria.

Dante Lake

Dante Lake is a small impoundment on Dante Creek, a tributary of Choteau Creek, near the south eastern boundary of Charles Mix County, South Dakota. The reservoir has an average depth of 11 feet and a maximum depth of 23 feet. Dante Creek is the primary tributary to Dante Lake which drains a small 2884-acre watershed of 80% cropland and 20% grazing lands. It was listed as a degraded waterbody during 2004.

Emanuel Creek

Emanuel Creek drains 120,000 acres in South East South Dakota and discharges to Lewis and Clark Lake. The stream receives runoff from agricultural operations. It has been determined that the creek experiences periods of degraded water quality due to fecal coliform bacteria and total suspended solids. The land use in the watershed consists of 61% cropland and 32% grazing with the remaining portions of the watershed composed of water and wetlands (2%), roads and housing (4%), and forested lands (1%).

Rahn Dam, Roosevelt Dam, Snatch Creek, and Choteau Creek (below Corsica Lake)

These waterbodies are listed but do not have assessments completed at this time. BMPs are being installed to limit sediment and fecal bacteria.

Non-Point Source Pollutants

Fecal Bacteria

The assessment report identified approximately 500 animal feeding operations that contribute fecal contamination to the tributaries of the Lewis and Clark Lake. In some cases the sampling proved that concentrations of fecal coliform bacteria were too high for human recreation. Evidence also pointed to improper spreading of manure on fields to be responsible for the levels whether by excessive rates or by incorporating in high run off areas.

Sedimentation

1. Sheet and Rill Erosion

   Modeling indicates that in western portion of the watershed cropland erosion is not critical to the sediment load, mainly due to lower percentages of cropping land in the watershed. Conversely many tributaries of the Keya Paha and Niobrara Rivers were found not to generate significant sediment loads to the model. Some eastern South Dakota watershed areas, particularly in Bon Homme County, may benefit from activities aimed at cropping practices – such as reduced tillage, no till, and buffering systems. To a larger extent, managed grazing systems, which would improve range condition and reduce runoff, will benefit the reservoir.

2. Riparian Areas

   The AGNPS model indicated concerns regarding riparian conditions. Data indicated that degraded riparian areas and channel erosion were a significant source for sediment entering the reservoir. Complexities of some of the degraded areas will require additional site specific analysis before any BMP designs. Eroded channels appear to be the result of several different causes, and in some cases a combination of causes in various locations in the watershed. Causes of degradation are listed below:

   - Season long grazing, overstocking, and unmanaged grazing of stream banks may be one of the larger contributors to degraded channels.

   - Inadequate sizing and placement of culverts has created some localized erosion problems downstream.

   - Poor ecological range condition on some of the uplands has created increased runoff that has led to channel erosion.

PROJECT GOALS, OBJECTIVES AND ACTIVITIES

The goal of the project is to restore the beneficial uses of Lewis and Clark Lake, and it's watersheds, through the installation of BMPs in the watershed that target sources of sediment, nutrients, and fecal coliform bacteria. To achieve the reduction, sediment and nutrient loads were decreased by installing BMPs in targeted critical areas consistent with NRCS Field Office Technical Guidelines or other appropriate standards. Critical areas were identified and prioritized by using AGNPS data in the Lewis and Clark Watershed Assessment report. In addition, the feeding operations were prioritized in descending order using this data from a standalone feedlot model and GIS that determined distance from stream networks. Table 2 illustrates the practices that will be installed to meet project goals for the over all project and for each segment. Producers that participated with the project signed a long term contract to insure practices were maintained in accordance with NRCS guidelines.

Table 2: Estimated Best Management Practices

Best Management Practices identified in the Watershed Assessments.	**Estimate of Acres/Practice to attain Project Goal**	**Estimate of Acres/practices Completed Segment 1 (2 years)**	**Estimate of Acres/practices Completed Segment 2 (4 years)**	**Estimate of Acres/practices Completed Segment 3 (4 -9 years)**
Best Management Practices				
Cropland Management BMP's	40,000 acres	750 acres	10,500 acres	28, 750
Filters/Buffer Strips/Grassed Waterways/Tree Planting	2000 acres	95 acres	500 acres	1,405 acres
Grassland BMPs				
Planned Grazing Systems	140,000 acres	1500 acres	30,000 acres	108,500 acres
Grass Seeding	20,000 acres	350 acres	5,750 acres	13,900 acres
Riparian Buffers	1200 acres	15 acres	500 acres	6850 acres
Animal Feeding Operations				
Animal Waste Systems	100	8	15	77

As practices were installed, they were also tracked on the State's tracking system. This system keeps track of expenses, load reductions achieved, and geographic locations of the practices. A map of BMP locations for this segment of can be found in Figure 5. This figure displays the type of BMP installed along with location.

Objective 1: Reduce nutrient, sediment, and fecal coliform loadings to Corsica to reduce lake phosphorus by 6 percent and reduce phosphorus loadings in the expansion area by 5 percent through the installation of BMPs. The long term goal for implementation of BMPs in the Corsica Lake watershed is to reduce phosphorus by 15 percent to attain the TMDL established.

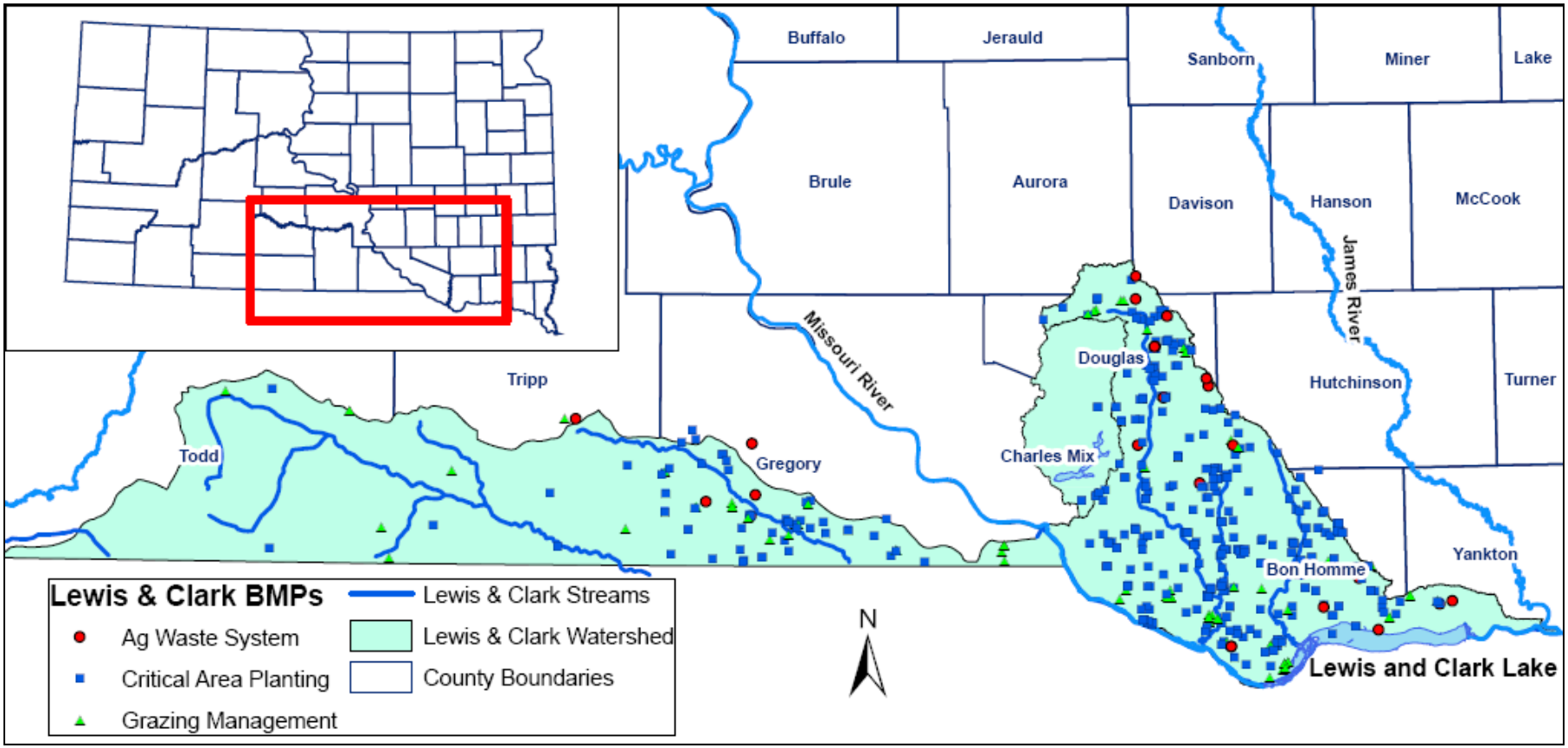


Figure 5: Lewis and Clark Segment 1 BMP Locations.

Task 1: Plan and implement cropland and grassland Best Management Practices (BMPs). Provide assistance to landowners with installation of BMPs on cropland and grasslands BMPs in the watershed that reduce fecal coliform bacteria, nutrient, and sediment loadings. BMPs targeted at critical cells identified in the watershed assessment.

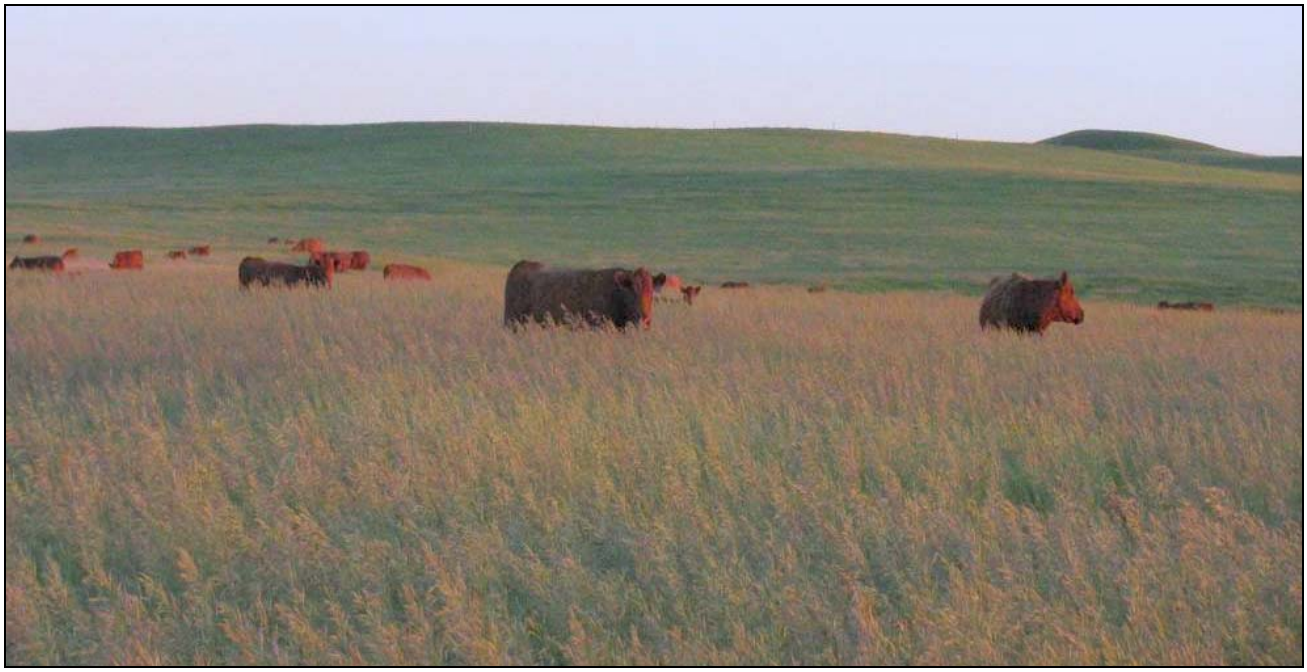


Figure 6: Grazing System in the West River Lewis and Clark Watershed.

Product 1: Filter strips, grassed Waterways, and Tree Planting on Cropland

Figure 7: Riparian Forest Buffers.

Accomplishments: Producer participation was excellent in accomplishing these practices. The majority of this group was funded through the Farm Service Agency's (FSA's) Conservation Reserve Program (CRP), which had the beneficial facet of a fifteen year rental payment on the enrolled land. 319 funds were used to install several grassed waterways on fields that did not meet the cropping history requirement of the CRP program. The cropland BMP segment consisted of reduced or no till acres enrolled for a ten year sign up with no cost associated to the project.

Completed:

Cropland BMPs	24,502 acres
Filter strips	4,329 acres
Grassed Waterways	99 acres
Tree Plantings	76 acres

Product 2: Grassland Management Systems Installed on 1500 acres of grasslands.

Accomplishments: The first year of this segment was a dry year and producer interest was high for alternative water for there grazing systems. These practices were tied to a requirement that livestock exclusion had to be implemented for all of their riparian areas. The use of CP-30, a practice of the CRP program, made this requirement more attractive for producers as they are paid a rental rate for the excluded area and have a higher percentage of fencing cost share than the LCWIP could pay. Two producers gave up use of several miles of livestock access along the shoreline on the Lewis and Clark Lake in order to get pipelines, tanks, and fencing installed on their grazing land. Overall the grazing portion was well received by producers.

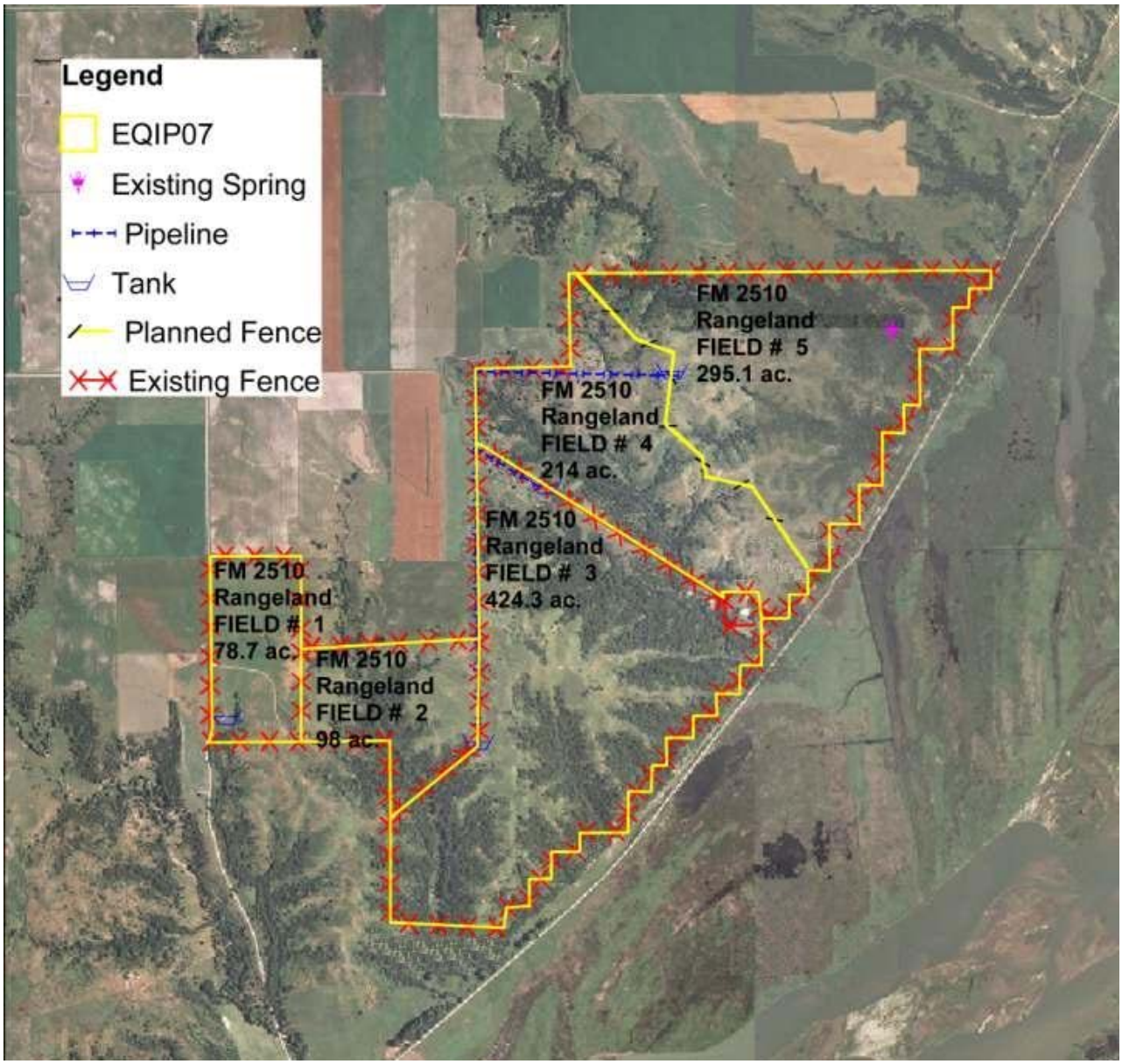


Figure 8: Map of Grazing System Implemented in the Lewis & Clark Watershed.

Figure 9: Grazing System Located with Lewis and Clark Lake in the Background.

Completed:

Prescribed grazing	8,859 acres
Fencing	63,847 LF
Pipelines	95,888 LF
Tanks	45 each
Ponds/Dugouts	3 each
Rural Water Hookups	3 each
Grassland Riparian Buffers	124 acres
Grass seeding	379 acres
Tree planting	0 acres

Task 2: Reduce fecal coliform loadings originating from animal feeding operations. Assist livestock producers with construction of eight animal waste management systems, to include nutrient management plans that reduce fecal coliform bacteria loadings.

Figure 10: Animal Waste System Installed with Artificial Liner due to Light Soils.

Product 3: Animal Waste Management Systems (AWMSs). Eight (8) animal waste management systems, to include nutrient management plans, will be installed by livestock producers. Private consultants and NRCS will design the animal waste management systems, and develop the Agricultural Nutrient Management Plan. Cost share for AWMSs were through this project and the NRCS EQIP program.

Accomplishments: A prioritized list of feedlots was made available from the assessment phase of the project. AGNPS information and other data were used to give a numeric score to each of the 400+ feeding operations to assess their polluting potential. The operation with the most polluting potential was ranked at the top of the list (number 1) and the ones with the least potential at the bottom of the list. The project gave special emphasis to operations that were in the top 25% of the prioritized list.

Figure 11: Feedlot System Built with Project Assistance.

Work was done closely with NRCS, and the EQIP program was used as an additional source of funding in all but one AWMS. The majority of designs were done by members of the NRCS engineering team. A private consultant firm was used as an additional source of design work to help fill the needs. After encountering many construction delays and additional costs from their work they have been taken off the TSP list for projects in the future. Two other firms are being used in a monitored capacity to help fill the demand for more AWS designs.

Producer interest and confidence was at a level that made it easy for the project to meet the goals set in the PIP for AWMSs. The number 1, 3, 5, and 8 ranked feeding operations have currently installed Ag waste systems and are among the 19 that were constructed in this segment. This interest is being carried into the second phase of the implementation project as currently twelve designs are being worked on and nine possible constructions are planned for the 2010 season.

Completed:

Engineered Designs	22
System Installation	19
Nutrient Management Plans	33

Objective 2: Provide project and BMP information to a minimum of 100 watershed landowners, 20 watershed organizations, and 2500 area citizens to inform them of this project's need and progress, and the results and recommendations from the Phase 1 Watershed Assessment.

Task 3: Implement an Information and Education campaign to inform the public and stakeholders on project need and progress, results, and recommendations of the Watershed Assessment Final Report.

Accomplishments: The project held informational meetings throughout the project areas during this segment. Several landowners, producers, and interested parties were in attendance.

A holistic grazing workshop was sponsored in Armour and was well attended by local producers.

Three public producer meetings were held in Tyndall, Armour, and Winner at the start of each expansion project to let them know what services could be provided by the implementation project. These meetings were attended by an average of thirty producers and led to BMP installation through initial contacts established at the meetings.

Several newspaper articles were published in local newspapers, within the project area, to provide information of the progress of the project. These articles along with other information and education products can be found in Appendix A of this report.

Completed:

15 planning/work group meetings
30 presentations to potential project partners
4 watershed BMP tours
10 news releases

Figure 12: Corsica Lake Watershed Producer Meeting.

Task 4: Complete progress reports and the Project Implementation Plan for the Lewis and Clark Lake Watershed.

Accomplishments: GRTS reports were written and submitted to meet the requirement of the mid year and annual reporting. This document fulfills the need of the final project report. The PIP was completed for the second segment of the Lewis and Clark Watershed Implementation Project.

Completed:
3 mid year reports
3 annual reports
1 Final Project Report
Completion of the Project Implementation Plan for the SD portion of the Lewis and Clark Lake Watershed.

Planned and Actual Milestones

Table 3 contains planned and actual milestones for Segment 1 of the Lewis and Clark Watershed implementation project. New goals and objectives are in place for Segment 2.

Table 3: Lewis and Clark Project Segment 1 Planned and Completed Milestones.

Goal/Objective/Task	Planned	Completed
Objective 1. BMP Installation		
Task 1: Crop & Grassland BMPs		
Products 1 & 2: BMPs		
Acres Benefited From Cropland BMPs	750	24,502
Filter Strips, ac.	75	4,329
Grassed Waterways, ac.	15	99
Grassland BMPs		
Grazing Systems, ac.	1,500	8,859
Fencing, LF	15,000	63,847
Grass Seeding, ac.	350	379
Pipelines, LF	7,500	95,888
Tanks	7	45
Ponds/Dugouts	5	3
Rural Water Hook-ups	3	3
Pasture/Grassland Buffers, ac.	15	124
Task 2: Livestock Nutrient Management		
Products: Ag Waste Systems		
Engineering Services	8	22
System Installation	8	19
Nutrient Management Plans	8	33
Objective 2: Outreach		
Task 3: Information Campaign		
Product 4:		
Tours	3	4
Informational Meetings	6	15
Presentations	30	30
News Releases	6	10

MONITORING RESULTS

The Step L program along with a custom spreadsheet developed by DENR were used as the vehicles for calculating nutrient and sediment load reductions for BMP installation. Table 4 below illustrates the amount of nutrient and sediment reduction associated with each group of BMPs for different sections of the watershed.

Table 4: Lewis and Clark Project Segment 1 STEPL Load Reductions.

Watershed Sections BMP Practice	**Reductions** Nitrogen lb/y	Phosphorous lb/y	Sediment Tons/Y
Corsica Lake Watershed			
Ag Waste System	47,812	13,636	33
Critical Area Planting	17,126	4,649	2,978
Grazing Management	4,032	582	304
Lewis & Clark East River			
Ag Waste System	78,336	13,701	
Critical Area Planting	120,340	37,480	27,034
Grazing Management	13,882	2,450	1,500
Lewis & Clark West River			
Ag Waste System	27,151	5,919	
Critical Area Planting	69,601	25,938	17,918
Grazing Management	9,964	3,005	2,239
Total	**388,244**	**107,360**	**52,006**

Volunteer monitoring has been taking place on Lake Andes over the past few years. They have been monitoring secchi depth and presence of Bacteria. A summary of lake sampling can be found in Appendix B of this report.

COORDINATION EFFORTS

The Randall RC&D council served as project sponsor. Numerous federal, state, and local agencies and organizations contributed funds, technical assistance, and cash and in-kind match to attain the project goals. Participating agencies and their contribution to the project are summarized below.

Douglas Co Conservation District, Aurora Co Conservation District, Bon Homme Co Conservation District, Hutchinson Co Conservation District, Charles Mix Conservation District, Gregory Co Conservation District, Clearfield/Keya Paha Conservation District, and Todd Co Conservation District, Yankton Co Conservation District

The Conservation Districts provided technical assistance in planning and implementation in their counties. They aided in setting up meeting sites and helping to mail out direct producer mailings. All of the tree plantings in this project were completed by the Conservation Districts as well. All cost share payments to producers were funneled through the Conservation Districts to provide more involvement in BMP selections.

South Dakota Department of Environment and Natural Resources

South Dakota Department of Environment and Natural Resources (SD DENR) administrated the U.S. EPA Section 319 funds and provided oversight of all project activities. Project administration included on-site visits, watershed tours, review of reports, and approval of payment requests. The project coordinators attended training workshops and meetings sponsored by SD DENR.

South Dakota Department of Agriculture

South Dakota Department of Agriculture administered the Commission Grant Program that was used as a funding source for some of the BMPs in this project.

United States Department of Agriculture-Natural Resources Conservation Service (NRCS)

The NRCS provided technical assistance for the design and installation of conservation practices. NRCS staff that provided assistance included a tribal liaison, soil scientist, engineers, range conservationists, and district conservationists from the White River, Winner, Burke, Lake Andes, Plankinton, Armour, Parkston, and Tyndall Service Centers. In addition to personnel, the NRCS provided computer hardware and software to generate plans, contracts, and maps; and office space to work in for the coordinators. The project utilized the USDA Environmental Quality Incentive Program (EQIP), and the Conservation Reserve Program administrated by the Farm Service Agency.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service aided in BMP installation by funding projects such as cross fencing on range sites, dam and pond revitalization, and funding native grass seeding on existing cropland.

Summary of Public Participation

Producers in the project area were notified of details of the project by press releases, fact sheets, and newsletters distributed through the mail, producer meetings, partner agency offices, and other public events. Examples of some of the media distributed are included in Appendix A.

An initial informational meeting was held in Corsica at the start of the Corsica Lake segment, which drew thirty interested non-agency participants. A good mix of agricultural producers, lake users, and town people were in attendance and interested in the BMPs that were being proposed for this project. At the start of each project expansion, a public meeting was held to inform the public of what was being offered by the Lewis and Clark Lake Implementation program. Tyndall was selected as the site for the expansion meeting for the East River expansion. Attendance was not as high for this meeting as the Corsica meeting but a good mix of attendees showed support and interest for the project goals. The start of the West River expansion was kicked off by a meeting in Winner to explain the objectives of the Lewis and Clark and to gather feedback on what could be done to draw interest in the BMPs proposed.

BMP selection was done more for the East River portion where row crop farming and confined livestock feeding operations were prevalent. The West River portion demonstrates more livestock grazing and cereal grain farming and discussion was held at this meeting to fine tune BMPs specifically for the producers of this region. The major practice proposed, and later adopted, was for Winter Feeding Areas. Producers were winter feeding cows along river and creek bottoms and the spring flush was washing manure down the creeks along with making calving difficult. The proposed BMP allowed for planting trees for livestock protection, to exclude livestock access to the stream and river channels, and to provide pipeline and tank for livestock watering. This practice has met success with producers on Segment one.

Expansion of Lake Andes into the Lewis and Clark brought with it a very active lake association; Charles Mix Lake Assn. has been very helpful in reducing nutrient loading into the Lake. In addition they are running a volunteer water monitoring program where water samples are taken on a regular basis to keep records of nutrient levels in the Lake.

ASPECTS OF PROJECT THAT DIDN'T WORK WELL

In general there were considerably more positives than negatives in this watershed project.

All of the goals established at the start of project were met or exceeded by solid producer participation. Most of the problems encountered were stemmed from getting coordination of agencies involved rather than producer involvement issues. Conservation Districts played a large role in this segment of project and getting everything running smoothly just took a little time. The Conservation Districts were set to be a contact point for local producers to come ask questions about funding practices involved with the Lewis and Clark Watershed Implementation Project and also were used to make payment directly to the producers with funds funneled to them from the Project. Once they became familiar with the practices offered and handling of funds, this has become a strong point of the project. It worked well to give a local face and involvement to the large area covered by the project.

Another problem encountered was with finding firms and engineers to cover the design process for animal waste systems. Engineers from NRCS were used at the start but the project had additional designs that NRCS did not have time to work on and a private TSP was brought in to pick up the additional design workload. The process worked for awhile but the TSP became overloaded as well and delays and unfinished work led to additional construction and financial problems for producers. This firm is currently not being used by the project and more firms are being checked out with the intention of having more firms with fewer projects for each to complete. Currently there are two private TSP firms that are working on Animal Waste System designs for producers in the Lewis and Clark Watershed Implementation Project.

PROJECT BUDGET

The Lewis and Clark Watershed Implementation Project was funded by an EPA Section 319 Clean Water Grant provided through the South Dakota Dept. of Environment and Natural Resources, a South Dakota Consolidated Water Facilities Construction Program Grant, South Dakota Commission Grant administered by the South Dakota Dept. of Agriculture, and the NRCS' Environmental Quality Incentive Program (EQIP). The South Dakota Dept of Game, Fish, and Parks and the United States Fish and Wildlife Service participated in Best Management Practices in the project area but their funding was such that additional funding wasn't needed and exact dollar figures weren't available to the project.

EPA Section 319 Clean Water Grant

The original project budget started with $300,000 to provide wages and benefits for a Project Coordinator, cost share for BMPs, and funds for information and education activities. The project budget was revised when the expansion from Corsica Lake to the East River portion of the Lewis and Clark took place in 2007. At this time an additional $514,800 was added to the budget to cover BMP development. This amount of funding was expended during segment one, which was 45 percent of the total project cost.

Consolidated Water Facilities Construction Program Grant

The original project budget included a total of $75,000 in funds for construction of Animal Waste Systems (AWS). After the expansion phase another application was filed which led to an additional $93,750 to be used toward the construction of AWS. A total of $168,750 was expended during this segment of project for a total of nine percent of the total project cost.

Environmental Quality Incentive Program (EQIP)

The original budget estimated $46,545 of EQIP funds to be spent, administered by the Natural Resources Conservation Service, on BMP development. The popularity of the program, and ease of matching 319 funds to this program, led to using this as a major funding source for BMP installation; especially for construction of Animal Waste Systems. A total of $445,304 was expended for BMP development.

Conservation Commission Grant Program

Original budget estimated $25,000 of Conservation Commission funds to be used in conjunction with this project, administered by the South Dakota Dept of Agriculture. The popularity of the EQIP program held down the use of this fund to $589.

Local Match

The amount expended for local match was wholly from operator match in funding their share of installation cost. A total of $413,389 in local cash and in-kind contributions were received during the project.

A complete account of actual, original, and amended project budgets are given in Table 5 through 7.

Table 5: Actual Project Expenditures by BMPs for Each Fund.

	Actual Expenditures							
ITEM	**319 EPA**	**Consolidated WFC Fund**	**Cons. Comm.**	**USDA**	**US F&W**	**SD GF&P**	**Local**	**Total Costs**
Personnel Support								
Project Coordinator	$45,765.28							$45,765.28
Administrative and Support	$1,745.00						$790.00	$2,535.00
Equipment and Supplies	$1,145.95						$3,902.67	$5,048.62
Travel: Vehicle, Ins. Mileage, Lodging	$11,449.15						$2,601.00	$14,050.15
Office Space (Randall RC&D @ $300/mo.)								
Internet Access ($20/mo.)								
SubTotal: Personnel	**$60,105.38**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$7,293.67**	**$67,399.05**
Objective 1: BMP's Installation								
Task 1: Cropland/Grassland BMP installation								
Product 1: Cropland BMP's - 750ac.	$693.93		$589.48				$427.80	$1,711.21
Product 2 : Grassland BMP's	$65,125.90						$21,708.77	$86,834.67
Objective 1: BMP Installation								
Task 2: Livestock Nutrient Management								
Product 3: Ag Waste Systems	$688,874.79	$130,000.00		$445,304.02			$382,639.07	$1,646,817.88
Objective 2: Outreach:								
Task 3: Information Campaign								
Product 4: Information & Education Activities							$1,320.00	$1,320.00
SubTotal: Reports/PIP Development	**$754,694.62**	**$130,000.00**	**$589.48**	**$445,304.02**	**$0.00**	**$0.00**	**$406,095.64**	**$1,736,683.76**
Total Project Cost:	**$814,800.00**	**$130,000.00**	**$589.48**	**$445,304.02**	**$0.00**	**$0.00**	**$413,389.31**	**$1,804,082.81**

Table 6: Original Budget for Lewis and Clark Watershed Implementation Project.

Lewis and Clark Watershed Implementation Project

Segment 1

ITEM	Year 1	Year 2	Total	319-EPA	Consolidated WFC Fund	Cons. Comm.	USDA	US F&W	SD GF&P	Local
Personnel Support										
Project Coordinator										
Salary and Benefits (20%)	$40,000	$41,200	$81,200	$81,200						
Administrative and Support										
Support Staff Salary and Benefits (500hr./yr.@$12/hr.)	**$6,000**	**$6,000**	**$12,000**				$2,000			$10,000
Financial Audit		**$1,200**	**$1,200**							$1,200
Liability/Board Insurance	**$850**	**$850**	**$1,700**							$1,700
Position Advertising	$400		$400							$400
Supplies/Office Equipment/Travel										
Equipment and Supplies	$2,200	$2,000	$4,200				$2,000			$2,200
Travel: Vehicle, Ins. Mileage, Lodging	$4,140.00	$4,140	$8,280	$5,050						$3,230
(12,000mi/yr @$.32/mi. + 3 days per diem/yr.)										
Office Space (Randall RC&D @ $300/mo.)	$3,600.00	$3,600	$7,200				$7,200			
(includes phone, FAX, Copier, etc.)										
Internet Access ($20/mo.)	$240.00	$240	$480				$480			
Subtotal: Personnel Support	**$57,430.00**	**$59,230.00**	**$116,660.00**	**$86,250.00**	**$0.00**	**$0.00**	**$11,680.00**	**$0.00**	**$0.00**	**$18,730.00**
Objective 1: BMP's Installation										
Task 1: Cropland/Grassland BMP installation										
Product 1: Cropland BMP's - 500ac.										
Filter Strips - 50 ac. @ $100/ac.	$5,000		$5,000	$3,750						$1,250
Grassed Waterways - 10ac. @ $1000/ac.	$2,000	$8,000	$10,000	$7,500						$2,500
Tree Planting - 10 ac. @ $2000/ac.		$20,000	$20,000			$12,500				$7,500
Product 2 : Grassland BMP's										
Planned Grazing Systems - 1,000 ac.										
Fencing - 10,000 LF @ $.90LF	$3,500	$5,500	$9,000					$4,250	$2,500	$2,250
Grass Seeding - 250 ac. @ $100/ac.	$7,500	$17,500	$25,000					$12,500	$6,250	$6,250
Pipelines - 5,000LF @ $2.00/LF	$4,000	$6,000	$10,000	$7,500						$2,500
Tanks - 5 @ $1,200 each	$2,400	$3,600	$6,000	$4,500						$1,500
Ponds/Dugouts - 3 @ $3000 each	$3,000	$6,000	$9,000					$4,500	$2,250	$2,250
Rural Water Hookup - 2 @ $1500	$3,000		$3,000	$2,250						$750
Pasture/Grassland Buffers - 10 ac. @ $150/ac.	$1,000	$500	$1,500				$1,125			$375
Tree Planting - 10 ac. @ $2000/ac.		$20,000	$20,000			$12,500				$7,500

Table 6 (cont.): Original Budget for Lewis and Clark Watershed Implementation Project.

Lewis and Clark Watershed Implementation Project

Segment 1

ITEM	Year 1	Year 2	Total	319-EPA	Consolidated WFC Fund	Cons.Comm.	USDA NRCS/FSA	US F&W	SD GF&P	Local
Objective 1: BMP Installation										
Task 2: Livestock Nutrient Management										
Product 3: Three (3) Ag Waste Systems										
Engineering Design Services - 3 @ $15,000 each	$30,000	$15,000	$45,000	$33,750						$11,250
System Construction - 3 @ $100,000 each	$100,000	$200,000	$300,000	$150,000	$75,000					$75,000
Nutrient Management Plans -3 @ $2000	$4,000	$2,000	$6,000	$4,500						$1,500
Subtotal: BMP Installation	**$165,400**	**$304,100**	**$469,500**	**$213,750**	**$75,000**	**$25,000**	**$1,125**	**$21,250**	**$11,000**	**$122,375**
Objective 2: Outreach:										
Task 3: Information Campaign										
(Costs covered by personnel/supplies budget are										
not included below)										
Product 4: Information & Education Activities										
Tours - 3 @ $200 each	$200	$400	$600							$600
Information Meetings - 4 @ $300 each	$300	$900	$1,200							$1,200
Presentations To Partners - 20 @ $100 each	$600	$1,400	$2,000							$2,000
News Releases - 4 @ 50 each	$100	$100	$200							$200
Subtotal: Outreach	**$1,200**	**$2,800**	**$4,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$4,000**
Task 4: Reports And PIP Development:										
Product 5: Reports and PIP										
(Costs covered by personnel/supplies budget are										
not included below)										
Semi-Annual Reports - 2 each										
Annual Reports - 2 each										
Final Report - 1 each										
Completion of PIP for Project Segment # 2										
Subtotal: Reports and PIP Development	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Project Cost:	**$ 224,030.00**	**$ 366,130.00**	**$ 590,160.00**	**$ 300,000.00**	**$ 75,000.00**	**$ 25,000.00**	**$ 12,805.00**	**$ 21,250.00**	**$ 11,000.00**	**$ 145,105.00**

Match:										
Ineligible Match - Federal and/or Project Allocated							$12,805.00	$21,250.00		$10,750
Eligible Match - Local and State					$75,000.00	$25,000.00	$ -	$ -	$11,000.00	$134,355
Match: Project Totals For Match			$ 545,355.00	$300,000	$75,000	$25,000			$11,000	$134,355
Match Percentages:			**100%**	**55%**	**14%**	**5%**			**2%**	**25%**

Table 7: Revised Budget for Lewis and Clark Segment 1 Expansion.

Lewis and Clark Watershed Implementation Project Budget

Segment 1 Expansion

ITEM	Year 1 Corsica Lake Current 319	Year 2 Corsica Lake Current 319	Year 3 East River SD L&C (Expansion)	Total Project Cost (ALL)	319 EPA Total (Three Years)	Consolidated WFC Fund	Cons. Comm.	USDA	US F&W	SD GF&P	Local
Personnel Support											
Project Coordinator											
Salary and Benefits (20%)	$40,000	$41,200	$20,000	$101,200	$101,200						
Project BMP Implementation Technician			$43,000	$43,000	$43,000						
Administrative and Support											
Support Staff Salary and Benefits (500hr./yr.@$12/hr.	$6,000	$6,000	$6,000	$18,000	$6,000			$2,000			$10,000
Financial Audit		$1,200.00		$1,200							$1,200
Liability/Board Insurance	$850	$850	$850	$2,550	$850						$1,700
Position Advertising	$400		$400	$800	$400						$400
Supplies/Office Equipment/Travel											
Equipment and Supplies	$2,200	$2,000	$2,000	$6,200	$1,000			$2,000			$3,200
Travel: Vehicle, Ins. Mileage, Lodging	$4,140.00	$4,140	$4,140	$12,420	$7,550						$4,870
(12,000mi/yr @$.32/mi. + 3 days per diem/yr.)											
Office Space (Randall RC&D @ $300/mo.)	$3,600.00	$3,600	$3,600	$10,800				$10,800			
(includes phone, FAX, Copier, etc.)											
Internet Access ($20/mo.)	$240.00	$240	$240	$720				$720			
SubTotal: Personnel	**$57,430.00**	**$59,230.00**	**$80,230.00**	**$196,890.00**	**$160,000.00**	**$0.00**	**$0.00**	**$15,520.00**	**$0.00**	**$0.00**	**$21,370.00**
Objective 1: BMP's Installation											
Task 1: Cropland/Grassland BMP installation											
Product 1: Cropland BMP's - 750ac.											
Filter Strips - 75 ac. @ $100/ac.	$5,000		$2,500	$7,500	$5,000			$625			$1,875
Grassed Waterways - 15ac. @ $1000/ac.	$2,000	$8,000	$5,000	$15,000	$11,250						$3,750
Tree Planting - 15 ac. @ $2000/ac.		$20,000	$10,000	$30,000			$12,500	$2,500			$15,000
Product 2 : Grassland BMP's											
Planned Grazing Systems - 1,500 ac.											
Fencing - 15,000 LF @ $.90LF	$3,500	$5,500	$4,500	$13,500					$4,250	$5,375	$3,875
Grass Seeding - 350 ac. @ $100/ac.	$7,500	$17,500	$10,000	$35,000				$6,250	$10,000	$10,000	$8,750
Pipelines - 7,500LF @ $2.00/LF	$4,000	$6,000	$5,000	$15,000	$11,250						$3,750
Tanks - 7 @ $1,200 each	$2,400	$3,600	$2,400	$8,400	$6,300						$2,100
Ponds/Dugouts - 5 @ $3000 each	$3,000	$6,000	$6,000	$15,000				$6,250	$2,500	$2,500	$3,750
Rural Water Hookup - 3 @ $1500	$3,000		$1,500	$4,500	$3,375						$1,125
Pasture/Grassland Buffers - 15 ac. @ $150/ac.	$1,000	$500	$750	$2,250				$1,650			$600
Tree Planting - 15 ac. @ $2000/ac.		$20,000	$10,000	$30,000			$12,500	$2,500			$15,000
Subtotal: Cropland/Grassland BMPs	**$ 31,400.00**	**$ 87,100.00**	**$ 57,650.00**	**$ 176,150.00**	**$ 37,175.00**	**$ -**	**$ 25,000.00**	**$ 19,775.00**	**$ 16,750.00**	**$ 17,875.00**	**$ 59,575.00**

Table 7 (cont.): Revised Budget for Lewis and Clark Segment 1 Expansion.

Lewis and Clark Watershed Implementation Project Budget (continued)

Segment 1 Expansion

ITEM	Year 1 Corsica Lake Current 319	Year 2 Corsica Lake Current 319	Year 3 East River SD L&C (Expansion)	Total Project Cost (ALL)	319 EPA Total (Three Years)	Consolidated WFC Fund	Cons. Comm.	USDA	US F&W	SD GF&P	Local
Objective 1: BMP Installation											
Task 2: Livestock Nutrient Management											
Product 3: Eight (8) Ag Waste Systems											
Engineering Design Services - 8 @ $15,000 each	$30,000	$15,000	$75,000	$120,000	$78,750			$11,250			$30,000
System Construction - 3 @ $100,000 each	$100,000	$200,000		$300,000	$150,000	$75,000					$75,000
System Construction - 5 @ $125,000 each			$625,000	$625,000	$375,000	$93,750					$156,250
Nutrient Management Plans -3 @ $2000	$4,000	$2,000		$6,000	$4,500						$1,500
Nutrient Management Plans 5 @ $2500			$12,500	$12,500	$9,375						$3,125
SubTotal: Task 2: Livestock Nutrient Mgt.	**$134,000**	**$217,000**	**$712,500**	**$1,063,500**	**$617,625**	**$168,750**	**$0**	**$11,250**	**$0**	**$0**	**$265,875**
Objective 2: Outreach:											
Task 3: Information Campaign											
Product 4: Information & Education Activities											
Tours - 3 @ $200 each	$200	$400		$600							$600
Information Meetings - 6 @ $300 each	$300	$900	$600	$1,800							$1,800
Presentations To Partners - 30 @ $100 each	$600	$1,400	$1,000	$3,000							$3,000
News Releases - 6 @ 50 each	$100	$100	$100	$300							$300
				$0							
Subtotal: Information Campaign	**$1,200**	**$2,800**	**$1,700**	**$5,700**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,700**
Task 4: Reports And PIP Development:											
Product 5: Reports and PIP											
Semi-Annual Reports - 3 each (April 2007,08, 09)											
Annual Reports - 3 each (October 2006,07,08)											
Final Report - 1 each											
Completion of PIP for Project Segment # 2											
SubTotal: Reports/PIP Development	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Project Cost:	**$224,030.00**	**$366,130.00**	**$852,080.00**	**$1,442,240.00**	**$814,800.00**	**$168,750.00**	**$25,000.00**	**$46,545.00**	**$16,750.00**	**$17,875.00**	**$352,520.00**

Match:											
Ineligible Match - Federal and/or Project Allocated								$46,545.00	**$16,750.00**		$16,375
Eligible Match - Local and State		**$1,362,570.00**			**$814,800.00**	**$168,750.00**	**$25,000.00**	**$ -**	**$ -**	**$17,875.00**	**$336,145**
Match: Project Totals For Match		**$1,377,570.00**	**$300,000**	**$514,800**	**$814,800.00**	**$168,750**	**$25,000**			**$17,875**	**$336,145**
Match Percentages:		**100%**	**22%**	**37%**	**59%**	**12%**	**2%**			**1%**	**24%**

FUTURE ACTIVITY RECOMMENDATIONS

Producers exhibited a willingness to participate in the Animal Waste System and livestock exclusion on riparian areas BMPs, and these should continue to be a focus for future segments. It will be discussed at future steering committee to consider holding a workshop for the feedlot operators to continue interest in this practice. A tour of some of these practices has been held and is highly recommended to continue on annual basis to help producers with questions they may have.

Acres of cropland BMP were substantially ahead of the goals in this segment. Most of the acres were adapting reduced tillage/no-till practices; however some of the areas closest to the Lewis and Clark Lake still exhibit conventional tillage practices. Emphasis needs to be placed in these areas to inform producers of the advantages of reduced tillage and of the Conservation Reserve Programs that would place buffers to help reduce soil erosion.

Discussion has been held about starting a water sampling program to verify reductions. The load reductions in this report were generated by the Step L Model and a spreadsheet developed by DENR. Data collection in the field would lend validity to the numbers produced by this model. Time should be given to allow soil to settle and cover vegetation to become established; maybe a period of two years, before data collection should began. It would be useful data to show actual reduction of nutrient loading for money being spent on the BMP installation. One of the possibilities is of training one of the coordinators to be in charge of the sampling project.

Keeping the gains in water quality made in this segment will require a high level of awareness right to the end of the project. It is suggested that the information and education programs started in this segment be continued to keep awareness in the fore front.

APPENDIX A

Brochures, Fact Sheets, Press Releases, and Promotional Materials

NEWS

For Immediate Release

Randall Resource Conservation and
Development Association, Lake Andes, SD

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

Information Provided to Landowners on the Corsica Lake Watershed Project

A very successful meeting was attended by almost sixty interested people, mostly landowners, at the Corsica Community Center on Thursday February 15th. They heard about the results of a non-point source sedimentation/water quality watershed assessment completed in 2005 and the current 56,000 acre watershed project. Attendees were also given a chance to ask questions of the local program managers from the NRCS, FSA, DENR and others.

The Corsica Lake Watershed Project is one of the outcomes of the completed assessment and is administered by the Randall Resource Conservation and Development Association. The meeting was co-sponsored by the Douglas County Conservation District which resulted in the excellent turnout of landowner.

Information was provided on current incentives available to landowners for measures needed to curb the current rate of sedimentation into Corsica Lake. The added technical and financial assistance for watershed landowners can assist with fencing, filter strips grassed waterways, pipelines, tanks, grass seeding, riparian buffers and feedlots and possibly other practices if needed.

Along with sediment filling up the lake according to the assessment, water quality is also an issue. The lake has dissolved oxygen and PH readings above state standards. This can lead to algae blooms, public contact recreation problems and fish propagation problems. In regards to phosphorus and nitrogen, Corsica Lake is on the threshold between full and partial support of its beneficial uses. Any reductions in nutrient loading (both phosphorus and nitrogen) are expected to provide increased protection for the lake's beneficial uses. Corsica Lake will benefit from watershed improvements that reduce sediment, nutrients and bacteria. For more information about the Corsica Lake Watershed Project contact the Douglas County Conservation District at 605-724-2846 ext. 3 or the Randall RC&D office at 605-487-7077 ext. 4

# # #

NEWS

For Immediate Release

United States Department of Agriculture
Natural Resources Conservation Service
Randall Resource Conservation and
Development Association, Lake Andes, SD

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

Multi-Agency Tour Showcased Priority Practices

To early in the three year project to claim the Lewis and Clark Watershed Project (L&CWP) "fully successful", Randall Resource Conservation and Development Association (RC&D) sees much progress being made because of partnerships. Randall RC&D recently held a multi-agency tour as part of its June meeting. The tour was held for Randall RC&D Councils own administrative purposes and for representatives from the EPA, NRCS, DENR SDACD's and a number of Conservation District Boards. "Whether you're administering just a few bucks or $814,800 like Randall RC&D, you have to keep good track of the progress and money", said Martin Drefs Chairman of the Randall RC&D Council.

The tour stopped at four farms in two counties and discussed how EQIP, Continuous CRP, Lewis and Clark Watershed Project (319 program), and a Lower James RC&D Pasture Leasing Program (CIG Program) are working together for the benefit of the environment and farmers alike.

In one case an EQIP $150,000 plus agricultural waste practice, coupled with L&CWP dollars and made the feedlot improvement work possible. It brought the cost share amount closer to 75% making it affordable for the farmer. According to the earlier completed watershed assessment, this particular feedlot contributed 50% of the sediment into Corsica Lake.

The group next stopped on a hill overlooking Choteau Creek just upstream of where the creek flows into Corsica Lake. The group discussed how Continuous CRP, L&CWP and the Lower James Pasture Leasing Program have joined together to make it possible for a landowner to fence cattle off a larger area near the creek. Kelly Tschumper, NRCS; Rocky Knippling, SDACD; and John Deppe, Lower James RC&D Coordinator worked together bring this about.

Liquid manure storage pond

Manure runoff sediment basin

# # #

NEWS

For Immediate Release: March 5, 2007

Randall Resource Conservation and
Development Association, Lake Andes, SD

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

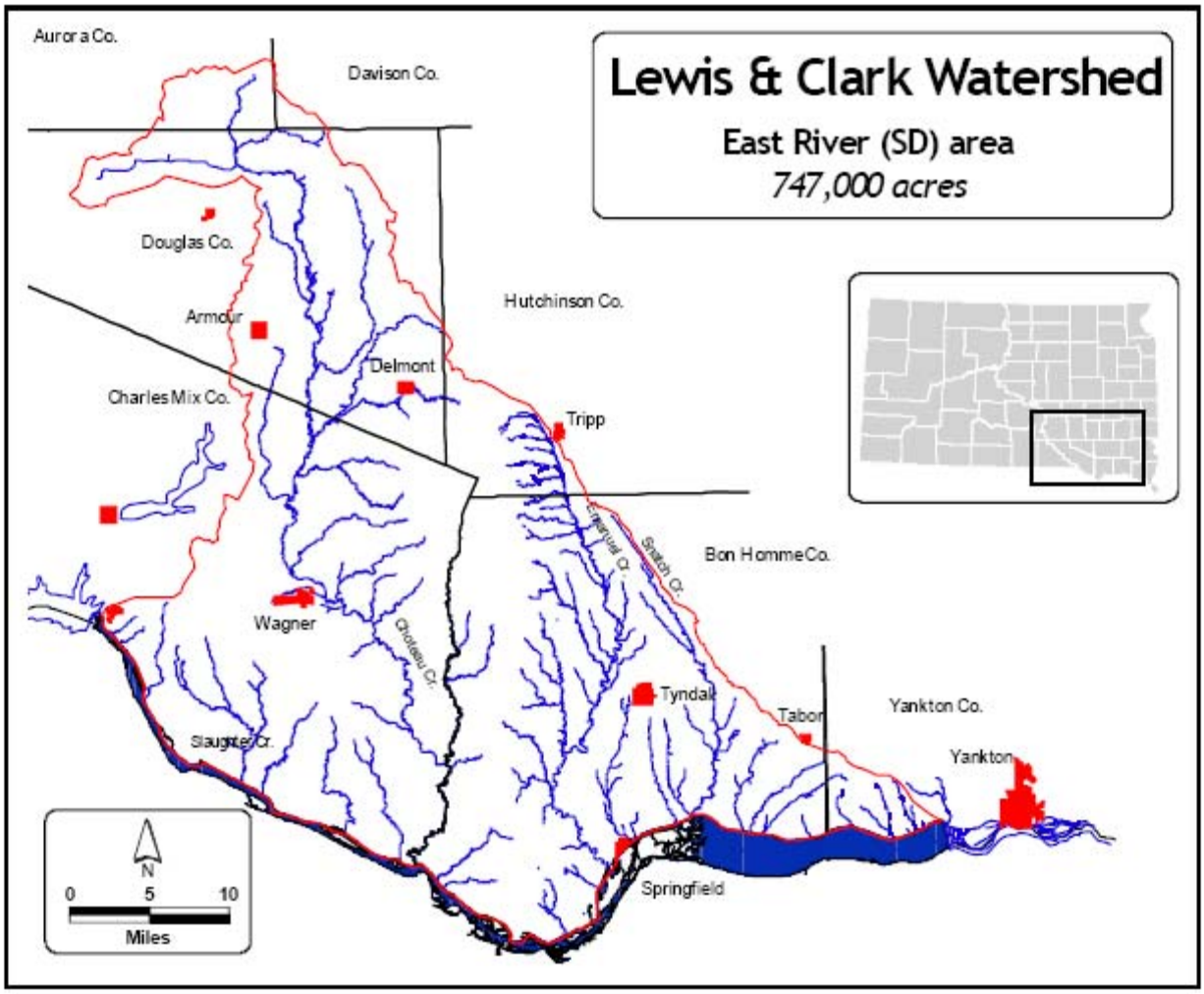
Landowner Meeting in Tyndall to Discuss Lewis and Clark Watershed Assistance Wednesday, March 21st

Landowners and farm operators are invited to attend the 1:00 PM meeting to learn about watershed efforts underway and financial assistance available to help decrease sediment and improve water quality in the large 747,000 acre Lewis and Clark Watershed. The area of concern includes all land that drains into Corsica Lake, Dante Lake, Wagner Lake, Choteau Creek, Emanuel Creek, Snatch Creek and eventually into Lewis and Clark Lake. The meeting is scheduled for Wednesday, March 21st from 1 to 3 PM in the Bon Homme County 4-H Building at 1910 Birch Street, Tyndall.

"This meeting will give people a chance to learn about new—soon to be available—technical and financial assistance for conservation practice application in the Lewis and Clark Watershed" say's Jeff Stewart RC&D Coordinator with the Randall Resource Conservation and Development Council. "All area landowners are encouraged to attend. New, as-well-as existing conservation programs will be discussed."

This summer, accelerated technical assistance and a new package of conservation incentives for Lewis and Clark Watershed landowners will be available through the local Conservation Districts and the USDA Service Center Offices located in Aurora, Bon Homme, Charles Mix, Davison, Douglas, Hutchinson and Yankton Counties.

The watershed project covering an area mostly east of Corsica and Lake Andes is the second part of an ongoing larger effort to help curb sediment and improve water quality into Lewis the Clark Lake south of Springfield to the Gavins Point Dam. Sediment is gradually clogging the Missouri River between the Fort Randall Dam and Gavins Point Dam. This 2-million acre area on the South Dakota side of the Missouri River is known as the Lewis and Clark Watershed.



Lewis and Clark Watershed outlined in red

# # #

Landowner Conservation Workshop

1 to 3 pm February 15, 2007

Where: Corsica Community Room on Main Street (south side)

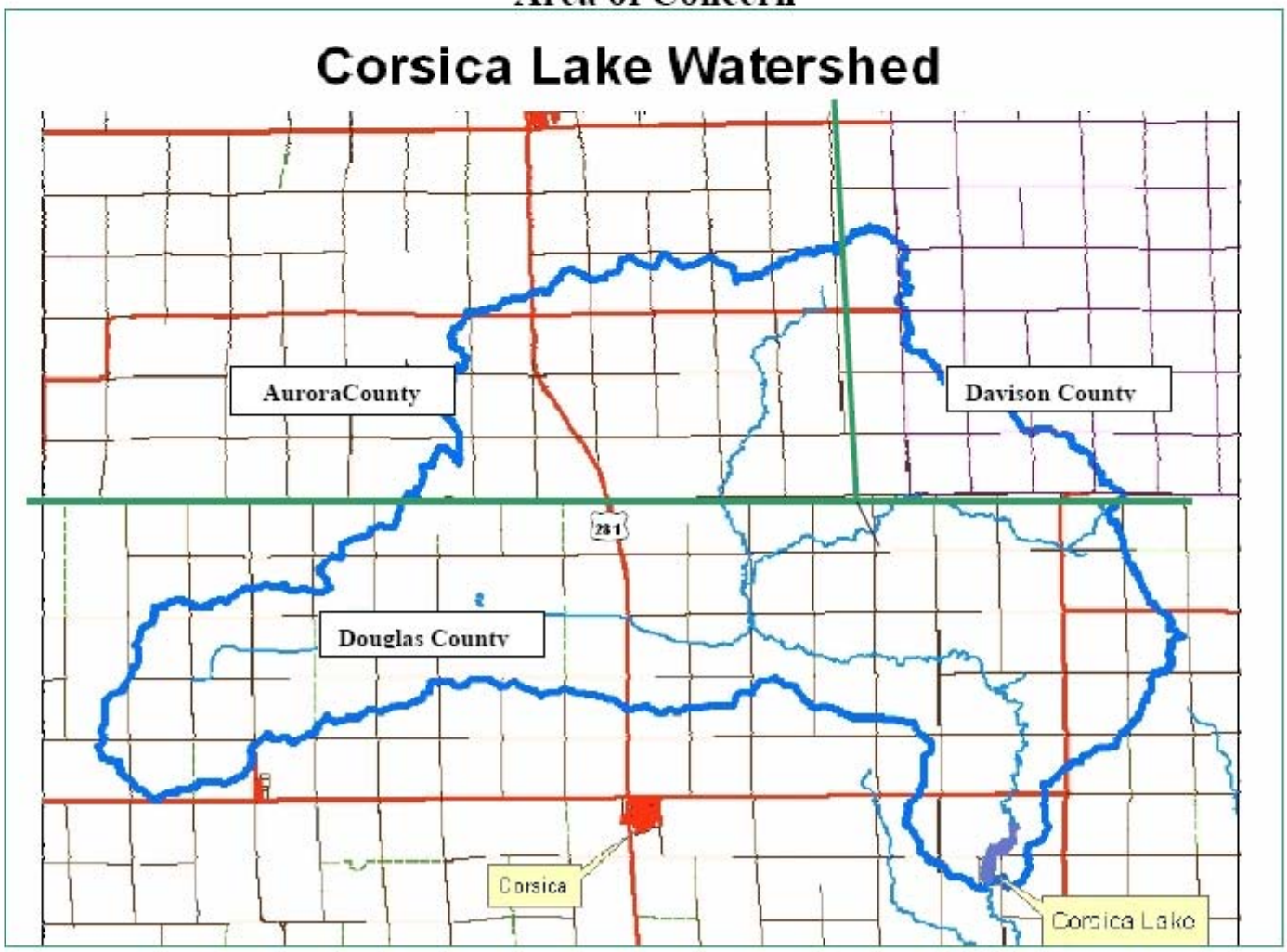
Why: Get updated on: What's currently available for technical and financial assistance

What's on the horizon…

Learn about the results of the Lewis and Clark Watershed Assessment

Ask Questions of the program managers

Area of Concern



NEWS

For Immediate Release - Jan. 26, 2007

Randall Resource Conservation and
Development Association, Lake Andes, SD

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

February 15th, Corsica Meeting Will Provide Information on Available Landowner Incentives to Improve Corsica Lake.

Landowners and farm operators are invited to attend this meeting to learn about watershed efforts underway and financial assistance available to them to help improve the water quality of Corsica Lake. The meeting is scheduled for February 15th from 1 to 3 PM in the Community Room in Corsica.

"This meeting will give people a chance to learn about new technical and financial assistance available for conservation practice application in the Corsica Lake Watershed" say's Jeff Stewart RC&D Coordinator with the Randall Resource Conservation and Development Council. "All area landowners are encouraged to attend, as existing available conservation programs will also be discussed."

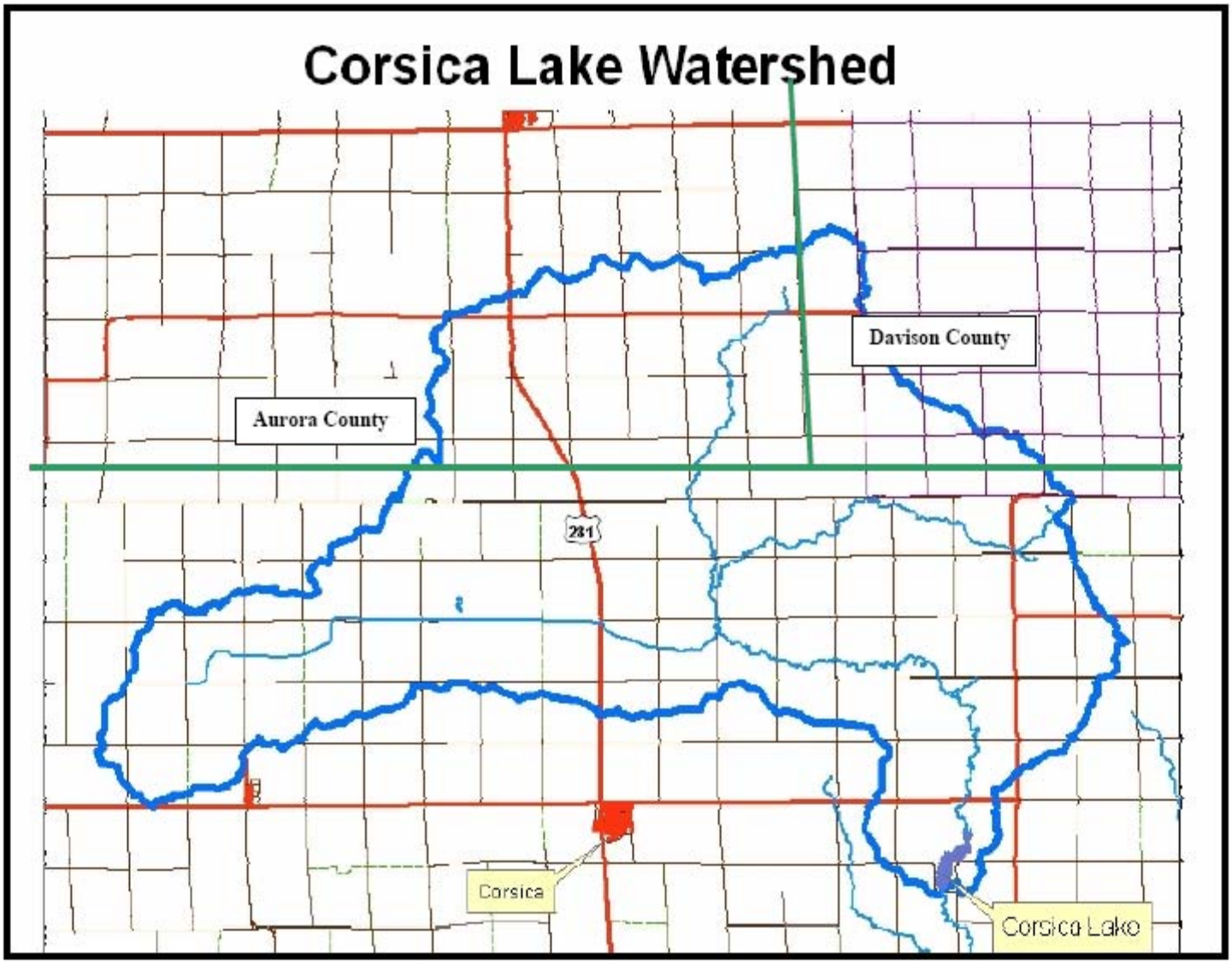
Right now, accelerated technical assistance and a new package of conservation incentives for Corsica Lake Watershed landowners is available through the Douglas County Conservation District and Aurora Conservation District/Natural Resources Conservation Service (NRCS) Ag Service Center Offices in Armour and Plankinton. The added assistance and incentives will also be available to surrounding landowners in the near future.

The brief two year watershed project near Corsica is the first part of an ongoing larger effort to help curb sediment and improve water quality into Lewis the Clark Lake south of Springfield to the Gavins Point Dam. Sediment is gradually clogging the Missouri River between the Fort Randall Dam and Gavins Point Dam. This 2-million acre area on the South Dakota side of the Missouri River is known as the Lewis and Clark Watershed.

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

The 56,000-acre Corsica Lake watershed was one of the first sub-watersheds in the L&CWS to have its assessment completed and is one of the reasons it was chosen first for the added assistance.

"Locally this is a very good opportunity for farmers to help Douglas County officials and others enhance the beauty and use of Corsica Lake for recreation. We've come a long way and this could make Corsica Lake even better with less sediment and algae finding its way into the lake." said Douglas County Commissioner Martin Drefs.



Available Conservation Practices

Feedlots

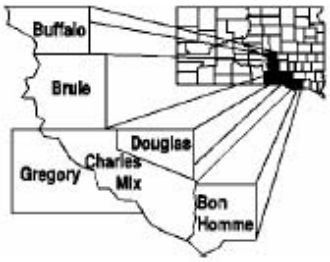
The Watershed Planning and Assistance Project has funding available to assist with feedlot engineering design (animal nutrient systems for animal feeding operations) on a cost-sharing basis. The Resource Management Specialists can provide further information.

Cropland and Grassland Practices

These include Filter Strips, Grassed Waterways, Tree Planting, Planned Grazing Systems, Fencing, Grass Seeding, Pipelines, Tanks, Ponds/Dugouts, Rural Water Hook-up, and Pasture/Grassland Buffers.

If you are located in the Corsica Lake Watershed, or think you might be, contact the Douglas County Conservation District (605-724-2846 X 3), Aurora Conservation District (605-942-7719 X 3), Davison County Conservation District (605-996-1564 X 3) or your local NRCS office at the above same phone numbers.

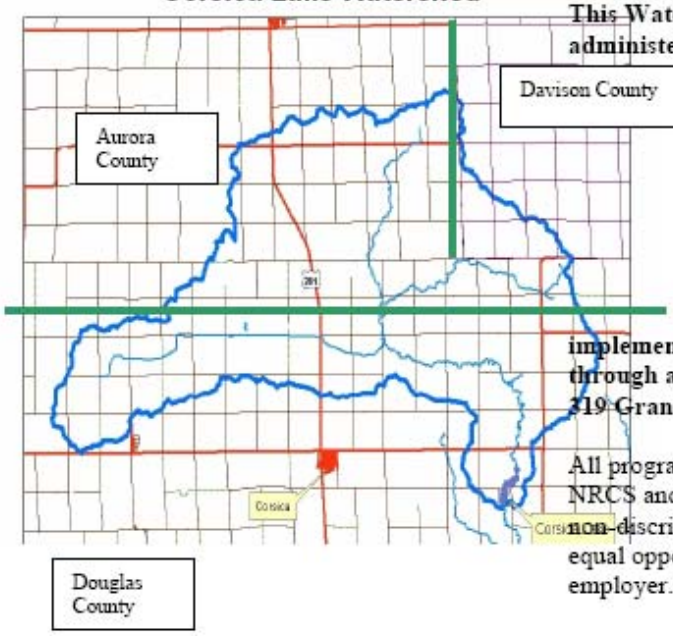
Randall RC&D (Resource Conservation and Development)



Sponsored by the Following:

Randall Resource Conservation and Development (RC&D) Association; Lower James RC&D; Douglas County Conservation District; Aurora Conservation District; Davison Conservation District; South Dakota Association of Conservation Districts (SDACD); Natural Resources Conservation Service (NRCS); and SD Department of Environment and Natural Resources (DENR)

Corsica Lake Watershed



This Watershed project is administered by the Randall RC&D [illegible], Inc. Major implementation funding is provided through a Clean Water Act Section 319 Grant

All programs and services of the NRCS and RC&D are offered on a non-discriminatory basis. USDA is an equal opportunity provider and employer.

Corsica Lake Watershed Implementation Project

What to do if you want assistance or to find out more.

Why We're Here

A Joint Effort to Reduce Pollution

The Corsica Lake Watershed consists of 56,038 acres above

the Corsica Lake Dam. A two year Watershed Assessment was completed in 2005 that showed the conservation practices needed to reduce runoff water--water that travels through agricultural land, picking up chemicals, animal waste and eroded soil--eventually depositing the material in our rivers, lakes and streams.

Because the risk of damage from these pollutants can be dramatically reduced through the application of proper land management practices, NRCS, SDACD, Conservation Districts and others have joined hands in the creation of the Corsica Lake Watershed Implementation Project.

Focus: Impaired Water Bodies

This watershed project is focused on reducing the pollution of Corsica Lake and smaller water bodies that have been identified as being affected by pollution and are, therefore, regarded as "impaired".

How It Works

Corsica Lake Watershed Landowners contact the Douglas County or Aurora Conservation Districts for an initial visit or the project's Resource Management Specialists contact selected landowners who have land that is likely to contribute some amounts of pollutants to the impaired water bodies.

The specialists provide the owners with information about watershed impairment, how improved management practices can improve their operation, what assistance is available

and the voluntary nature of the project.

The selected owners are offered assistance in developing a plan employing land management practices that will benefit their operation while improving water quality within the watershed. The plan will concentrate on Best Management Practices that will qualify the landowner for financial assistance in implementing those practices.

Program Neutral Planning Techniques

The Resource Management Specialists will utilize program neutral planning techniques. Program neutral planning is the development of a plan without regard to funding sources. This means that no specific fund source will be initially targeted. The result is a plan that better fits the needs of the landowner and the resource by not limiting funding opportunities to a single source whose qualification requirements may frequently change.

The Process

Planning assistance offered by the project includes:

- Conducting a survey of land's soil, water, plants, animals, air and cultural resources.
- Determining the landowner's needs and preferences
- Identifying land management alternatives
- Preparing a map of existing and planned management practices
- Developing the landowner's preferred plan
- Selecting appropriate financial assistance sources
- Completing financial assistance application forms

In summary, the project's Resource Management Specialists offer a comprehensive service that includes developing a qualified land management plan as well as help in locating and applying for financial assistance.

Once the practices are funded, the funding agency and the landowner will be responsible for implementation of the practices.

❖❖❖

NEWS

United States Department of Agriculture
Natural Resources Conservation Service
Randall Resource Conservation and
Development Association, Lake Andes, SD

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

FARMERS WILL LIKE NEW INCENTIVES TARGETED FOR CORSICA LAKE WATERSHED

A new package of financial incentives for the Corsica Lake Watershed, along with accelerated technical assistance to landowners, is now available through the Douglas County Conservation District and Aurora Conservation District/Natural Resources Conservation Service (NRCS) Ag Service Center Offices in Armour and Plankinton. Landowners and operators in the Corsica Lake watershed are encouraged to participate in the brief two-year effort.

"This is a very good opportunity for local farmers to help Douglas County officials and others enhance the beauty and use of Corsica Lake for recreation. We've come a long way and this could make it even better with less sediment, farm chemicals and livestock waste getting into the water" said Douglas County Commissioner Martin Drefs.

State, federal, local agencies and non-profit organizations have worked together to bring this about as part of the first phase of a much broader effort to reduce sediment that is gradually clogging the Missouri River between Fort Randall Dam and Gavins Point Dam. This 2-million acre area on the South Dakota side of the Missouri River is known as the Lewis and Clark Watershed (L&CWS). It is being analyzed under the direction of the South Dakota Department of Environment and Natural Resources and is scheduled for completion in January. The 56,000-acre Corsica Lake watershed was one of the first sub-watersheds in the L&CWS to have its assessment completed and is one of the reasons it was chosen first for the added assistance.

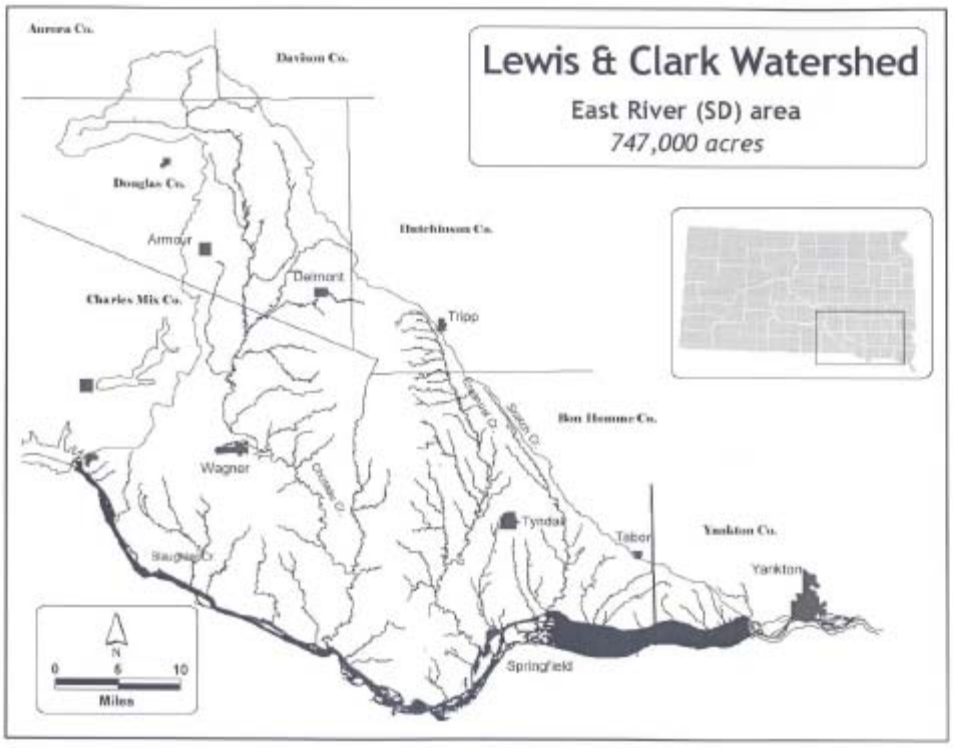
In 2005 the State Department of Environment and Natural Resources submitted to the Environmental Protection Agency a non-point source pollution grant application compiled by the Randall Resource Conservation and Development Association (RC&D) and the Lower James RC&D. The grant was recently approved for $300,000.00. Existing conservation programs will be coupled with the new money to offer a better opportunity to cover and solve all aspects of non-point source pollution.

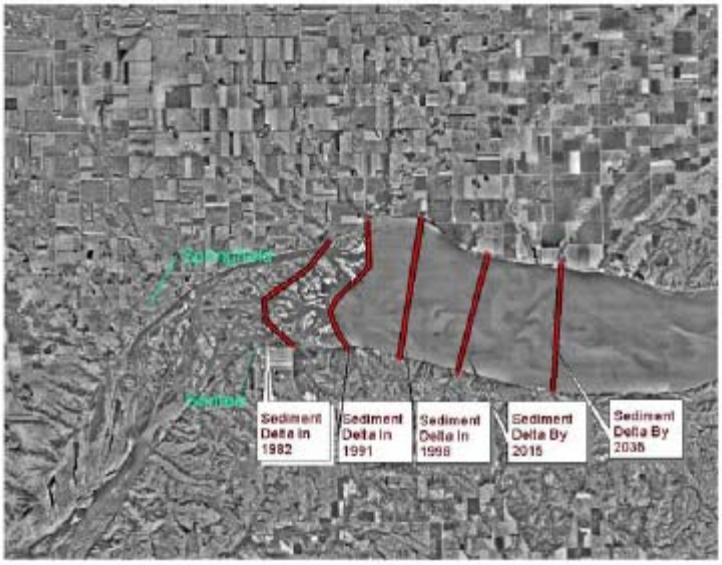
The added technical assistance comes from the South Dakota Association of Conservation District (SDACD). Project Coordinator with the SDACD is Rocky Knippling. Rocky will be working closely with the conservation districts, NRCS, USF&WS, SDGF&P, FSA and other agencies to bring about the best opportunities for farmers.

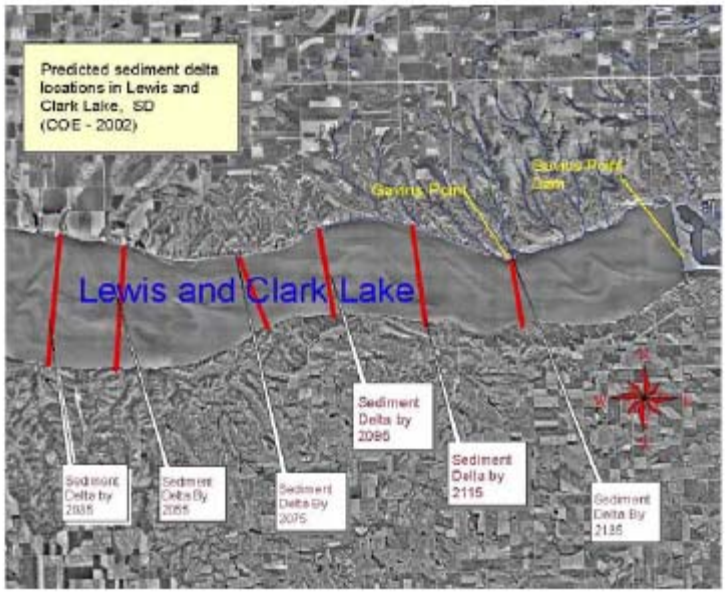
"The conservation partnership of agencies and groups working on this project has done a tremendous job in bringing this opportunity about", said Jeff Stewart coordinator with the Randall RC&D.

Main contacts for assistance, or to learn more about the opportunities available, are the Douglas County Conservation District 605-724-2846; Aurora Conservation District 605-942-7719; Charles Mix NRCS office 605-487-7501; SDACD office 605-895-4099; Rocky Knippling 605-280-7768; or the Randall RC&D office 605-487-7077 Ext 4.

Corsica Lake Watershed







# # #

Available Conservation Practices
Feedlots

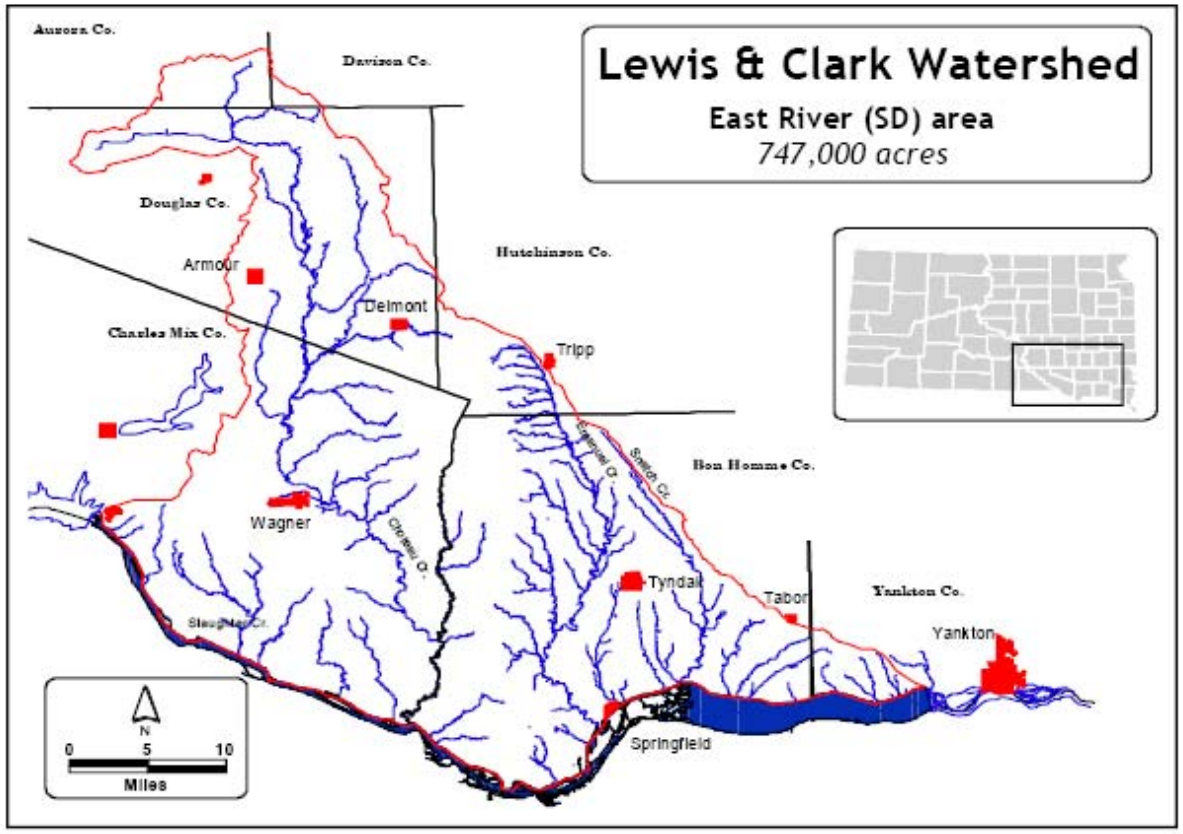
The Watershed Planning and Assistance Project has funding available to assist with feedlot engineering design (animal nutrient systems for animal feeding operations) on a cost-sharing basis. The Resource Management Specialists can provide further information.

Cropland and Grassland Practices

These include Filter Strips, Grassed Waterways, Tree Planting, Planned Grazing Systems, Fencing, Grass Seeding, Pipelines, Tanks, Ponds/Dugouts, Rural Water Hook-up, and Pasture/Grassland Buffers.

What to do if you want assistance or to find out more.

If you are located in the East River portion of the Lewis & Clark Watershed, or think you might be, contact the following: (605)
Aurora Conservation District - 942-7719 # 3
Bon Homme Cons. District – 589-3232 #3
Charles Mix Conservation Dist. – 487-7577
Davison Conservation District - 996-1564 # 3
Douglas Conservation District - 724-2846 # 3
Hutchinson Conservation District – 387-5539
Yankton Conservation District – 665-6704
Randall RC&D Office – 487-7077 #4
or your local NRCS office at the above same phone numbers.



Lewis & Clark Watershed Implementation Project

Sponsored by the Following:

**Randall Resource Conservation and Development (RC&D);
Lower James RC&D;
Aurora, Bon Homme, Charles Mix, Davison, Douglas, Hutchinson and Yankton Conservation Districts;
South Dakota Association of Conservation Districts (SDACD);
Natural Resources Conservation Service (NRCS); and
SD Department of Environment and Natural Resources (DENR)**

Why We're Here

A Joint Effort to Reduce Pollution ~

The East River side of the Lewis & Clark Watershed consists of 747,000 acres. A two year Watershed Assessment was completed in 2005 that showed the conservation practices needed to reduce runoff water--water that travels through agricultural land, picking up chemicals, animal waste and eroded soil--eventually depositing the material in our rivers, lakes and streams.

Because the risk of damage from these pollutants can be dramatically reduced through the application of proper land management practices, NRCS, SDACD, Conservation Districts and others have joined hands in the creation of the Lewis & Clark Watershed Implementation Project.

Focus: Impaired Water Bodies

This watershed project is focused on reducing sediment and pollution of all lakes and streams in the watershed. This includes Lewis and Clark Lake at the culmination of the tributaries.

How It Works

Lewis and Clark Watershed Landowners should contact the one of the Conservation Districts for an initial visit by the project's Resource Management Specialists.

The specialists provide the owners with information about watershed impairment, how improved management practices can improve their operation, what assistance is available and the voluntary nature of the project.

The selected owners are offered assistance in developing a plan employing land management practices that will benefit their operation while improving water quality and reducing sediment within the watershed. The plan will concentrate on Best Management Practices, some or all of which may qualify the landowner for financial assistance in implementing those practices.

Program Neutral Planning Techniques

The Resource Management Specialists will utilize program neutral planning techniques. Program neutral planning is the development of a plan without regard to funding sources. This means that no specific fund source will be initially targeted. The result is a plan that better fits the needs of the landowner and the resource by not limiting funding opportunities to a single source whose qualification requirements may frequently change.

The Process

Planning assistance offered by the project includes:

- Conducting a survey of land's soil, water, plants, animals, air and cultural resources.
- Determining the landowner's needs and preferences
- Identifying land management alternatives
- Preparing a map of existing and planned management practices
- Developing the landowner's preferred plan
- Selecting appropriate financial assistance sources
- Completing financial assistance application forms

In summary, the project's Resource Management Specialists offer a comprehensive service that includes developing a qualified land management plan as well as help in locating and applying for financial assistance.

Once the practices are funded, the funding agency and the landowner will be responsible for implementation of the practices.

❖ ❖ ❖

This Watershed project is administered by the Randall RC&D Association, Inc. Major implementation funding is provided through a Clean Water Act Section 319 Grant.

Lewis and Clark Watershed Implementation Project
Protecting a National Resource Today

Fact Sheet

Starting in 1930's with the first dam, the six dams on the Missouri River now provide:

- Quality drinking water
- Water for irrigation
- Hydropower
- Flood control
- Recreation
- Fish and Wildlife habitat
- Endangered Species and Cultural Resource Protection

Current Situation: Reaction vs. Action

Reaction

- Elevation or moving of roads

  Moving drinking water intakes

- Establish new boat launch pad

- Buy-out of homes

Action

In 2002 meetings were held as local organizations and citizens were concerned about sediment filling in Lewis and Clark Lake. Assistance was requested from Randall and Lower James RC&D's

- 2003 to 2005: Randall RC&D administered a watershed assessment project with the help of Lower James RC&D, local Conservation Districts and the SD Department of Environment and Natural Resources. This led to the chronology of implementation efforts below.

- July 2006: Starting at the top of the Lewis and Clark Watershed, a two-year **56,300 acre** Corsica Lake Watershed project was initiated with $300,000 of EPA dollar. Local cash and in-kind match has come from the Conservation Districts and landowners.

- With the help of the **South Dakota Partnership** (DENR, Douglas County Conservation District, SD Association of Conservation Districts, NRCS and others) this project became very successful surpassing assigned practice and acreage and goals. Most of the project money was combined with the CRP and EQIP for the best use.

- In July of 2007 the project was expanded from 56,300 acres to **747,000 acres** and included the entire east river side of the Lewis and Clark Watershed. $514,000 of EPA money and $130,000 from the SD Board of Water and Natural Resources money was added to the project.

- In March of 2008 the watershed acreage in the west river counties of Gregory, Tripp and Todd were added to the project with no additional money bringing the project work area to **1.9 million acres.**

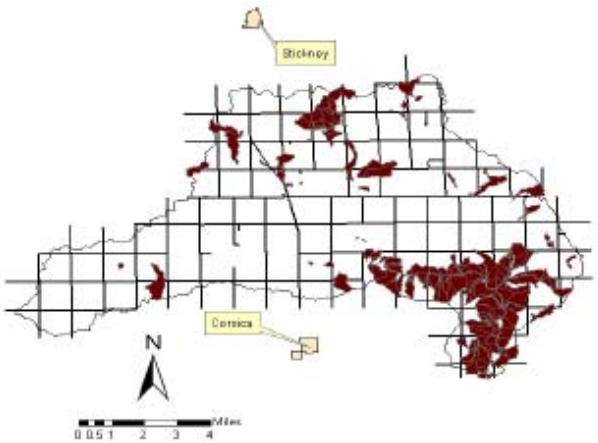
- Also in 2008 the **95,000 acre** contiguous Lake Andes Watershed was added as an amendment to the project. The same program neutral non-point source pollution control tasks will be undertaken plus monthly lake water testing by citizen volunteers.

Three year goals are listed under Total Expected, achieved is under Total Implemented

BMP	Practice/Unit	Total Expected	Total Implemented
Ag Waste System	Engineering Services	8	18
Ag Waste System	Nutrient Management Plans	8	24
Ag Waste System	System Installation	8	15
Critical Area Planting	ac Cropland BMPs	750	14,529
Critical Area Planting	ac Filter Strips	75	1511
Critical Area Planting	ac Grassed Waterways	15	85
Grazing Management	ac Grass seeding	350	158
Grazing Management	ac Grazing Systems	1500	6769
Grazing Management	ac Pasture/Grassland Buffers	15	52
Grazing Management	LF Fencing	15,000	12,788
Grazing Management	LF Pipelines	7500	78,054
Grazing Management	Ponds/dugouts	5	1
Grazing Management	Rural Water Hookup	3	2
Grazing Management	Tanks	7	19
Information & Education	Informational meetings	6	12
Information & Education	News Releases	4	8
Information & Education	Presentations	30	22
Information & Education	Tours	3	3

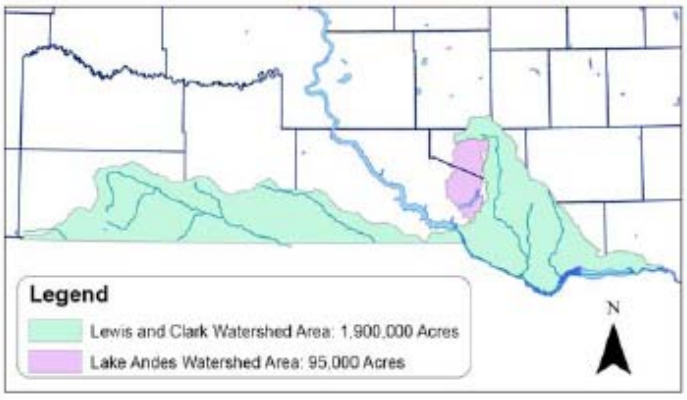
175 landowners implemented watershed goaled conservation practices in 2008

Corsica Lake Watershed Critical Areas



Project in 2006, 56,300 acres

Lewis and Clark Implementation Project Area



Project in 2008 includes parts of 10 counties and 2 million acres in South Dakota

NEWS

For Immediate Release

United States Department of Agriculture
Natural Resources Conservation Service
Randall Resource Conservation and
Development Association, Lake Andes, SD

For more information:
Jeff Stewart, Randall RC&D Coordinator
605-487-7077 Extension 4

ARMOUR AND MENNO TO HOST HOLISTIC RESOURCE MANAGEMENT GRAZING WORKSHOPS

Two, one-day "Grassland Management For Profit and Stewardship" through Holistic Resource Management Workshops will be held in southeast South Dakota, on March 8 at Armour and March 7 at Menno. These free workshops will feature Wayne Berry, a life-long livestock producer, rotational grazer, and certified Holistic Resource Management instructor. The Armour workshop will be held at the Blue Moon and will include a presentation by Dave Steffen, rancher and range consultant from Burke, South Dakota. The Menno workshop is to be held at the Legion Hall and will include a presentation by Dr. Alexander Smart, Range Professor, South Dakota State University.

Holistic Resource Management is a goal-centered, decision making model that includes the needs of the farm/ranch family, natural resources, and business profitability. The first step in managing for profit and creating wealth involves setting goals, and then making consistent sound decisions towards these goals. This workshop is highly recommended to producers, conservationists, students, educators and natural resource agency people.

The featured speaker, Wayne Berry, is an associate professor at Williston State College, Williston, North Dakota, where he teaches economics and farm management. He has a master's degree in agriculture economics. Dr. Berry is certified by the Center of Holistic Management in Albuquerque, NM as a holistic educator and a Certified Nx Level Entrepreneurial Trainer/Facilitator. The foundation of the workshop will be the Holistic Management model as developed by Alan Savory. Dr. Berry's ranch reached Tier 3 in all 3 categories of the Conservation Security Program (CSP) in the initial signup.

At the Armour workshop, March 8, 9AM to 3PM, Blue Moon, Dave Steffen will present for 1½ hours on how he has set goals for his ranch, and how his grassland rotational system is meeting those goals. Dr. Wayne Berry will present at both workshops for 4-5 hours on Holistic Resource Management, and the grazing system used on his ranch. At the Menno workshop, March 7, 9AM to 3PM, Legion Hall, Dr. Alexander Smart will also present information on predicting forage production and managing smooth brome pastures.

These workshops are sponsored by county conservation districts, extension offices, Randall RC&D in Lake Andes and the Lower James RC&D, Mitchell, SD. Please RSVP if you will attend to allow for meeting planning by sponsors. For more information about these workshops:

Armour, March 8, **contact by March 2,** Nancy Barrick, Douglas Conservation District, Armour, Ph: 605-724-2846; Roger Barrick, Douglas County Extension, Armour, Ph: 605-724-2719; or John Deppe, Lower James RC&D, Mitchell, SD, 605-996-1031.

Menno, March 7, **contact by March 5**, John Keimig, Hutchinson County Extension, Ph: 605-387-4205 or John Deppe, Lower James RC&D, Ph: 605-996-1031.

# # #

Available Conservation Practices

Feedlots

The Watershed Planning and Assistance Project has funding available to assist with feedlot engineering design (animal nutrient systems for animal feeding operations) on a cost-sharing basis. The Resource Management Specialists can provide further information.

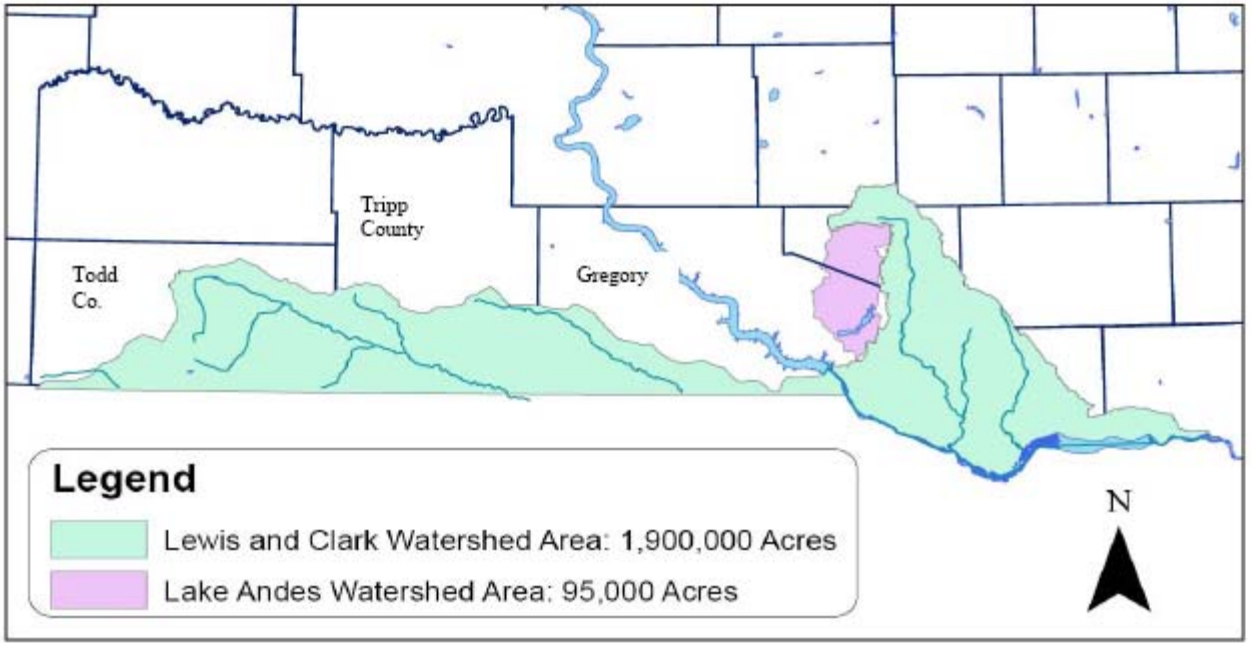
Cropland and Grassland Practices

These include Filter Strips, Grassed Waterways, Tree Planting, Planned Grazing Systems, Fencing, Grass Seeding, Pipelines, Tanks, Ponds/Dugouts, Rural Water Hook-up, and Pasture/Grassland Buffers.

What to do if you want assistance or to find out more.

If you are located in the Lewis & Clark Watershed, or think you might be, contact the following Conservation Districts:
Gregory County (Burke) 605-775-2770
Hamill (Winner) 605-842-0603
Clearfield/Keyapaha 605-842-0603
Todd County (Mission) 605-856-4440
Aurora (Plankinton) 605-942-7719
Bon Homme County (Tyndall) 605-589-3232
Charles Mix (Lake Andes) 605-487-7577
Davison (Mitchell) 605-996-1564
Douglas County (Armour) 605-724-2846
Hutchinson (Menno) 605-387-5539
Yankton County (Yankton) 605-665-6704
Randall RC&D Office – 487-7077 #4

Lewis and Clark Implementation Project Area



Lewis & Clark Watershed Implementation Project

Sponsored by the Following:

Randall Resource Conservation and Development (RC&D); Lower James RC&D; The following Conservation Districts: Gregory County, Hamill, Clearfield/Keyapaha, Todd County, Aurora, Bon Homme County, Charles Mix, Davison, Douglas County, Hutchinson, and Yankton County Conservation District; The SD Association of Conservation Districts (SDACD); Natural Resources Conservation Service (NRCS); and SD Department of Environment and Natural Resources (DENR)

Why We're Here

A Joint Effort to Reduce Pollution ~

The South Dakota portion of the Lewis & Clark Watershed consists of 1.9 million acres. A two-year Watershed Assessment was completed in 2005 that showed the conservation practices needed to reduce runoff water--water that travels through agricultural land, picking up chemicals, animal waste and eroded soil--eventually depositing the material in our rivers, lakes and streams.

Because the risk of damage from these pollutants can be dramatically reduced through the application of proper land management practices, NRCS, SDACD, Conservation Districts and others have joined hands in the creation of the Lewis & Clark Watershed Implementation Project.

Focus: Impaired Water Bodies

This watershed project is focused on reducing sediment and pollution of all lakes and streams in the watershed. This includes Lewis and Clark Lake at the culmination of the tributaries.

How It Works

Lewis and Clark Watershed Landowners should contact the one of the Conservation Districts for an initial visit by the project's Resource Management Specialists.

The specialists provide the owners with information about watershed impairment, how improved management practices can improve their operation, what assistance is available and the voluntary nature of the project.

The selected owners are offered assistance in developing a plan employing land management practices that will benefit their operation while improving water quality and reducing sediment within the watershed. The plan will concentrate on Best Management Practices, some or all of which may qualify the landowner for financial assistance in implementing those practices.

Program Neutral Planning Techniques

The Resource Management Specialists will utilize program neutral planning techniques. Program neutral planning is the development of a plan without regard to funding sources. This means that no specific fund source will be initially targeted. The result is a plan that better fits the needs of the landowner and the resource by not limiting funding opportunities to a single source whose qualification requirements may frequently change.

The Process

Planning assistance offered by the project includes:

- Conducting a survey of land's soil, water, plants, animals, air and cultural resources.
- Determining the landowner's needs and preferences
- Identifying land management alternatives
- Preparing a map of existing and planned management practices
- Developing the landowner's preferred plan
- Selecting appropriate financial assistance sources
- Completing financial assistance application forms

In summary, the project's Resource Management Specialists offer a comprehensive service that includes developing a qualified land management plan as well as help in locating and applying for financial assistance.

Once the practices are funded, the funding agency and the landowner will be responsible for implementation of the practices.

❖❖❖

This Watershed project is administered by the Randall RC&D Association, Inc. Major implementation funding is provided through a Clean Water Act Section 319 Grant.

Landowner Conservation Workshop

1 to 3 pm Wednesday March 21, 2007

Where: **4-H Building; 1910 Birch Street in Tyndall**

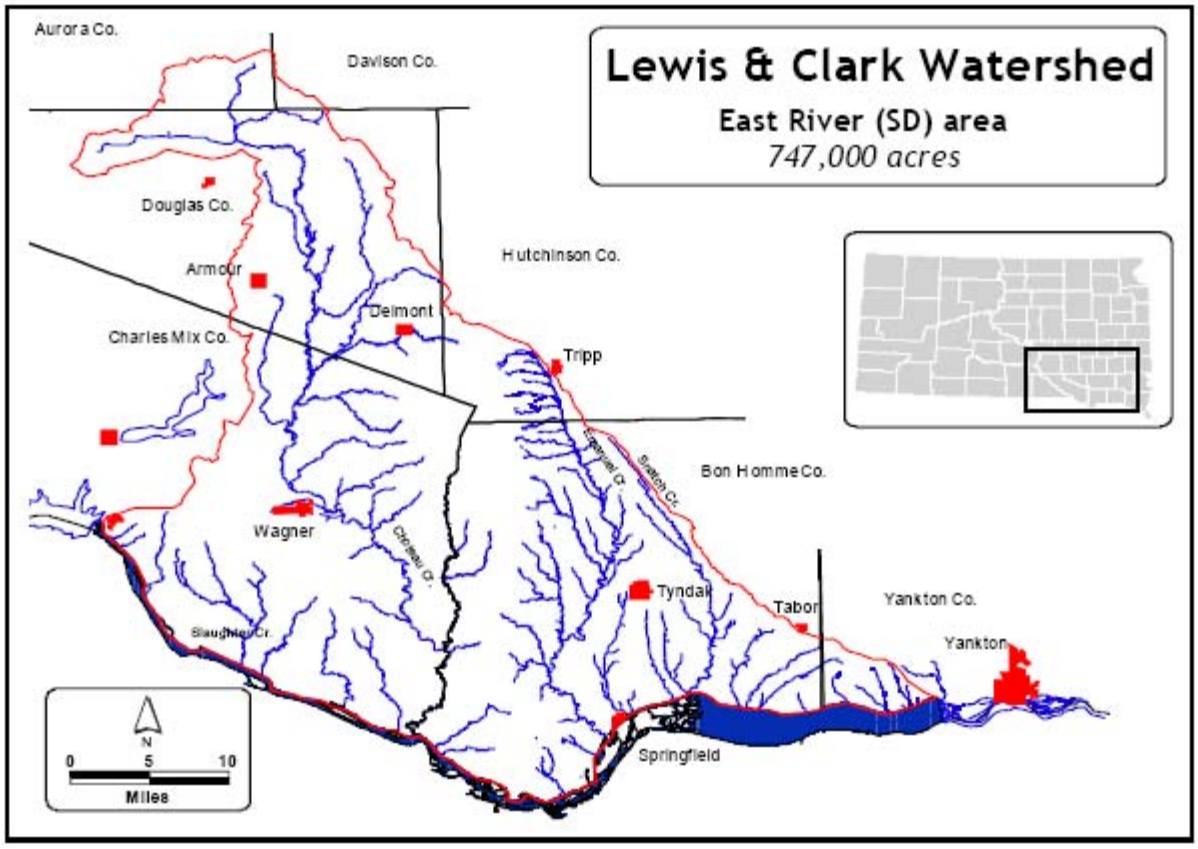
Why: **Get updated on: What's currently available for technical and financial assistance**

What's on the horizon…

Learn about the results of the Lewis and Clark Watershed Assessment

Ask Questions of the program managers

Area of Concern



APPENDIX B

Lake Andes Water Testing Results

Dakota Water Watch Summary of Lake Andes

In 2010, 10 volunteers sampled three sites on Lake Andes and collected a total of 21 samples between April and October. In 2008, the number of volunteers monitoring those same three sites was eight (10 samples collected) and in 2009 the number was 12 monitors (18 samples collected). Sampling included taking a Secchi depth measurement, a bacteria sample, water temperature, air temperature, and recording wind direction, cloud cover, recent precipitation, water level, presence of invasive species, and water color and odor. Monitors were also asked to fill out a questionnaire about their personal attitude toward water quality at that time.

Secchi Depth Measurements

The average of all Secchi depth values collected in 2010 was 0.32 meters. This is most likely an improvement over the 0.29+ meters seen in 2009 (one of the transparency measurements taken in 2009 was greater than the total depth at that location so we are unable quantify exactly how clear the water really was). As in 2008 and 2009, water clarity improved as you moved from south to north.

Since sampling began in July, 2008, we can compare three years of data between the months of July and October. The transparency values for 2010 all fall between the values recorded in 2008 and 2009. The one exception may be September 2010. Observations on this day were made difficult by the presence of algae. Water clarity was strongly degraded at two of the three sampling sites, making a lake-wide average unreliable, but these conditions may not be representative of the lake as a whole.

Lake Andes Secchi Depth Averages From July to October in 2008 and 2009

	2008	2009	2010
July	0.27	0.40	0.33
August	0.37	0.15	0.27
September	0.33	0.14	obscured by algae
October	0.29	0.43	0.27

Variation of Secchi depth measurements can be caused by many things including multiple observers at the same location, time of day, wave action, presence or absence of algae or other suspended matter, etc.

Water quality parameters can be used to determine the Trophic Status of a lake. Such parameters include Secchi depth measurements, total phosphorus, and chlorophyll-*a*. Dakota Water Watch samples did include Secchi depth measurements, but those measurements were recorded near the shoreline. Secchi depth measurements used to calculate trophic status are recorded mid-lake or at the deepest location of the lake.

When the available Secchi depth values for Lake Andes are entered into the formula for trophic status, the results are a value of 76 in 2008, 78 in 2009, and 76 again in 2010. Any values above 66 indicate a hypereutrophic condition. However, it is important to remember that this number was derived from shoreline/near shoreline Secchi depth measurements and may not be an accurate representation of the lake as a whole. To make an accurate assessment of your lake's health, it is important to also collect nutrient information, as well as other limnological data, and to assess the lake's physical shoreline attributes. You can read more about Trophic Status on pages 11 & 12 in the 2009 Dakota Water Watch Data summary booklet.

The EPA has calculated a desired Secchi depth value for lakes within Nutrient Ecoregion 5 (the Ecoregion that contains Lake Andes) at ≥ 1.30 meters. This value is very generalized, but it can give you some idea as to the typical value that a waterbody in this ecoregion should have. See page 6 & 7 of the 2009 DWW summary booklet for more information.

Bacteria Sampling

Of 21 bacteria samples taken in 2010, 11 (52%) showed the presence of *E. coli*. This is up from 2009 when only six of 18 samples contained detectable numbers of *E. coli*. However, the numbers of *E. coli* involved are relatively small and well below both the EPA's and South Dakota's standards.

E. coli is important because its presence is a very good indication that the water has been recently contaminated by fecal material. Likely sources of contamination include cattle, wildlife, or malfunctioning septic systems. Pages 12-14 in the 2009 year end summary contain a more detailed explanation of *E. coli* and why it is used in Dakota Water Watch.