

**SECTION 319 NONPOINT SOURCE CONTROL PROGRAM  
WATERSHED PROJECT FINAL REPORT**

**LAKE BYRON WATERSHED PROJECT**

by

**BEADLE CONSERVATION DISTRICT**

**December 31, 1997**

**This project was conducted in cooperation with the South Dakota Department of Environment and  
Natural Resources and the United States Environmental Protection Agency, Region VIII**

**Grant Number 5065**

## EXECUTIVE SUMMARY

PROJECT TOTAL: Lake Byron Watershed Project

GRANT NUMBER: 5065

INITIATION DATE: October 1, 1993

EXPIRATION DATE: December 31, 1997

### FUNDING:

TOTAL BUDGET: \$864,925.00

TOTAL EPA GRANT: \$245,275.00

TOTAL EXPENDITURES: \$850,331.00

TOTAL EXPENDITURES OF EPA FUNDS: \$211,150.00

TOTAL LOCAL MATCH ACCRUED: \$323,263.00

### ACCOMPLISHMENTS

Some goals in the project were realized and exceeded while others were more difficult to attain. The Conservation Reserve Program (CRP) greatly assisted in getting cropland planted to grass. Grass filterstrips were more difficult to implement. Shelterbelts were planted; however, not to the degree originally planned. The conservation tillage program was a highly successful portion of the project.

More shoreline stabilization was installed than was originally planned. Cabinowners around the lake became involved in private stabilization. The Game, Fish & Parks stabilized some of their shoreline also.

### OTHER ISSUES

Although much has been accomplished, more shoreline work needs to be done. Many Best Management Practices (BMP) are being done by operators in the watershed; however, as with the shoreline work, there is more that needs to be done. Some practices that need to be done are expensive and therefore, operators are reluctant to go ahead with them. A future grant could include additional cost-share to encourage other BMP's.

## METHODS

**Task 1: Information and Education.** Dissemination of information gained through the Foster Creek Riparian Demonstration Project to operators in the watershed through news articles, tours, public meetings, existing newsletters and personal contacts.

**Actual.** A public meeting was held for operators at the Lake Byron Lodge. A tour was taken to various sites in the watershed as well as viewing the large section of shoreline stabilization. District supervisors, Natural Resources Conservation Service (NRCS) personnel, Department of Agriculture and DENR officials were invited. The Huron Plainsman has covered progress on the project with a number of articles. The district newsletter covered progress regularly. The Project Coordinator shared information as he made personal contact with operators.

**Task 2: Nutrient and Sediment Reduction.** Reduce the amount of nutrients and sediment entering Lake Byron by 50% through the use of cropland and grassland BMP's. Installation of conservation tillage systems on 5,000 acres of cropland using conservation tillage, crop residue use, pesticide and fertilizer management, grass waterways and windstrip cropping. Recommendation two from the D/F study recommends 10,000 acres for treatment. The acres not treated through this project will be addressed using other programs and funding sources. Installation of grazing management systems on 5,000 acres of grassland using proper grazing use, fences, deferred grazing, planned grazing systems and installing alternative water sources. This will accomplish 100% of the treatment for recommendation eight of the D/F study. Plant 150 acres of trees and 1000 acres of grass. This will accomplish 100% of the treatment for recommendation seven of the D/F study.

**Actual.** The conservation tillage consisted of 4,642 acres planted with no-till or minimum-till. This was the actual number of acres reported to the office. More acres were planted using this method; however, those acres were not reported to the office for documentation when it was discovered the cost-share for this practice was depleted. Grazing management plans were completed on 3500 acres. Grass was planted on 980.9 acres. The Conservation Reserve Program (CRP) greatly aided in the number of acres planted to grass. Sixty eight acres of trees were planted. The number called for in the grant (150 acres) seems to be somewhat unrealistic. With the old farm bill cost share was available for shelterbelt planting; however, in the new farm bill, the continuous CRP was the only thing available for cost-share on trees. Without cost-share it is difficult to sell a practice even if it is for the good of the producer.

**Task 3: Filterstrips.** Plant 200 acres of grass filterstrips, this will include field borders. These grass filterstrips will serve as a buffer to slow sediment and nutrients from entering the riparian area. This will complete 100% of recommendation four from the D/F Study.

**Actual.** This was a difficult practice to sell to producers. Seventy acres were actually planted to filterstrips. Another area of 7500 feet along the shoreline was fenced 30 to 50 back from the lake to keep cattle out of the lake. Three hundred Bur Oak trees were planted to assist in stabilizing the shoreline and improve the

riparian area. This area will serve as a buffer to slow nutrients and sediment from entering the lake.

**Task 4: Sediment Traps and Streambank Stabilization.** Construct 6 sediment basins and complete 3 streambank stabilizations to reduce the amount of sediment entering the lake, create wildlife habitat and provide water for livestock. The US Fish and Wildlife Pond Development Program will be used to construct these. This will complete 100% of the treatment for recommendation six of the D/F Study.

**Actual.** Three streambank stabilization sites were completed along with 4 sediment ponds. The streambank stabilization consisted of planting approximately 100 Bur Oak trees in three different sites where beaver had destroyed the existing trees and it appeared the bank would begin to slip if trees were not present. The site as it is now will serve as wildlife habitat. Two other pond sites were identified; however, the watershed areas above the sites were too large for US Fish & Wildlife technology. NRCS engineers were not available to complete the work needing to be done. One dam was constructed which was not in the original work plan.

**Task 5: Lake Shore Restoration.** Complete shoreline stabilization along 2,500 feet of the most critical shoreline by completing excavation, rip-rap, grass seeding and fencing. Softer Practices are also being considered. Recommendation three from the D/F Study identifies 3410 feet of severe shoreline erosion. Other funding sources are being sought to complete the needed stabilization.

Stabilization of the lake and streambank shoreline, Task 4 and 5, will be accomplished by the use of the Rosgen method with the use of native plants, trees, and rocks as much as possible. The East River Riparian Range Conservationist will be utilized after she attends the Rosgen's Fluvial Geomorphology Interagency Riparian Course.

**Actual.** During the winter of '94-'95, 1920 feet of hard shoreline stabilization work was completed on the north shore. Excavation was done and rip-rap placed. The summer of '96 found another 800 feet being completed near the boat ramp and on the hogsback. The winter of '97 another 800 feet was completed in the northwest park area and the east side of the south boat ramp. Game, Fish and Parks became involved in the shoreline work and contributed extra funds to get more completed. Nearly 40 cabin owners completed shoreline stabilization on their private property. This would account for over 5,000 additional feet of stabilization. One area has a very severe problem - it is thought to be a type of sinkhole. This area needs to be addressed in a future grant. In addition, three hundred willow trees were planted on the hogsback area.

**Task 6: Animal Waste Management.** Conduct an animal feeding area and feedlot survey. Construct 10 animal feeding areas and 4 animal waste management systems on sites identified as critical by the survey. This will complete 100% recommended by the D/F Study.

**Actual.** Two animal waste systems were installed. One previously identified site is no longer in business and the other is temporarily on hold while checking out the large commercial hog business. Of the 10 animal feeding areas, four were actually installed. Two were highly visible areas near the lake. Both had cattle actually

standing in the lake all summer. By moving feeding areas, the cattle are no longer in the lake which gave very good public perception of the project.

## PROJECT SUMMARY AND FUTURE RECOMMENDATIONS

There is more work to be done in the Lake Byron Watershed area, but how it is to be accomplished is questionable. Before a grant is written and submitted for funding, it is desirable to have commitment on the part of the operators in the watershed. They should be contacted and a contract written with the practices they intend to implement. The problem with that scenario is where does the funding come from for the time involved in making these contacts? With this grant it should be noted that much interest was expressed prior to the beginning of the project. With implementation, operators expected a great deal of cost share. It seemed to be a "hard sell" if no cost share was available. By having contracts "up front", there would be no excuses or higher expectations.

There is also a need for additional shoreline stabilization, but funding for that is difficult to secure as a stand alone practice. It makes a more "fundable project" if it is tied in with watershed practices.

In conclusion, this grant has allowed many things to be completed both at the lake site and in the watershed, but it should not be considered finished. The Beadle Conservation District appreciates the opportunity to assist in what has been done.

# Budget Actuals

PROJECT ACTIVITY	TOTAL	GP/ACP	FEDERAL	319	STATE	LOCAL
<b>BEST MANAGEMENT PRACTICES</b> Grazing Management (3500 acres)	34,840	13,484		539		20,817
Conservation Tillage Reduced & No-Till (4642 acres)	192,970				99,566	93,404
Animal Waste System Animal Feeding Areas - 4 Animal Waste Systems - 2	3,475 92,351	146	146	20,000	293 25,000	2,890 47,351
Grass Filterstrips (70 acres)	8,238			2,323	2,427	3,488
Tree Planting (68 acres)	34,830	21,679				13,151
Grass Seeding (980.9 acres)	93,185		46,592			46,593
Sediment Basins (4 ponds) (1 Check Dam)	7,425 5,325		3,712 3,698		1,856	1,857 1,627
Fish Clean-up	7,200					7,200
Streambank Stabilization (3 sites)	510					510
Shoreline Stabilization Private (Approximately 3,500 feet) Public (3670 feet)	65,928 181,890			78,259	14,275 75,474	51,653 28,157

PROJECT ACTIVITY	TOTAL	GP/ACP	FEDERAL	319	STATE	LOCAL
<b>PERSONNEL</b>						
Project Coordinator	48,416			46,289	2,127	
Benefits	9,990			9,990		
Travel (12,560 miles at \$.24)	3,014		2,683	331		
Staff Development	599			599		
Office Space	5,100		1,275	1,700		2,125
Contractual Engineering	13,290			13,290		
Technical Assistance	36,000			36,000		
<b>MONITORING &amp; EVALUATION</b>						
Water Quality Monitoring	175			175		
<b>INFORMATION &amp; EDUCATION</b>						
Photos & Slides	145			145		
Questionnaires	172			172		
Tours	258		30	3	135	90
Displays	380			380		

PROJECT ACTIVITY	TOTAL	GP/ACP	FEDERAL	319	STATE	LOCAL
Fact Sheets	143			143		
Newsletters	500					500
Project Signs (3 installed)	812			812		
Informational Meetings	3,170		1,140		180	1,850
<b>TOTALS</b>	<b>850,331</b>	<b>35,309</b>	<b>59,276</b>	<b>211,150</b>	<b>221,333</b>	<b>323,263</b>