



MinnesotaCorn

RESEARCH & PROMOTION COUNCIL

FINAL REPORT

PROJECT TITLE: *Root River Stream Bank Stabilization*
PROJECT NUMBER: *4124-16SP*
PRINCIPAL INVESTIGATOR: *Bob Scanlan, Assistant Manager*
ORGANIZATION: *Root River Soil & Water Conservation District*
PHONE NUMBER: *(507) 724-5261 ext. 3*
EMAIL: *scanlancrew@gmail.com*

ABSTRACT

Stream bank erosion within the Root River watershed continues to be a concern for many landowners.

Seasonal floods along with increased annual rainfall events have emphasized the need for installing additional conservation practices to aid in stabilizing critical reaches along our streams.

Aerial photography, stream mapping and landowner testimonials provided the evidence that significant soil losses were occurring.

While discussing options for stream bank stabilization it was determined that the cost for traditional stabilization work, such as typical rip rap shaping projects can be seven times greater in cost per linear foot of treatment area. Landowners were searching for other low cost alternatives to address the problem. Even though no stream bank restoration project is guaranteed to work, the cedar tree revetment practice seemed to be a very good fit for our topography. The Root River SWCD decided to pursue the revetment project and has recently completed their fifth successful year of stream revetment work of which MN Corn Growers had an active role for four years.

The Root River watershed has many riparian areas that contain a significant amount of highly productive cropland. The steady and permanent loss of these acres to excessive stream bank erosion is a financial loss to landowners that cannot be recovered.

INTRODUCTION

The Riceford Creek, a tributary to the Root River, was identified by technical staff as a priority stream to treat.

Previous efforts in this watershed to aid in the stabilization of this stream included brush removal to invigorate grassy vegetation controlled grazing and minimal bank shaping where feasible. Success was minimal.

Since the stream bank revetment project started in 2014 there have been 12,536 linear feet of bank stabilized. Post assessment work has been done on the previous sites and there are signs of significant sediment deposits that hold better established vegetation and other reaches that clearly reflect lower

erosion rates. The Board of Soil and Water Resources pollution reduction estimator was used to determine soil losses. Approximately 5,312 tons of sediment per year will be saved.

While all of these are positive signs that alternative practices can be successful, abnormal rainfall events can still have devastating effects on previous work. Our goal of long-term bank stabilization is very demanding yet within reach.

OBJECTIVE AND GOAL STATEMENTS

The Root River SWCD's objective was to treat and stabilize as many critical areas on the Riceford Creek as possible in one season. Given the scope of our project we set a goal of approximately a half mile of stream bank restoration to be completed each year.

The project is labor intensive and requires many hours of "hands on work" to complete the installation process. Individual landowners were not capable of committing to this extreme work load.

The Root River SWCD has been successful in receiving yearly grants through the Clean Water Fund application process to utilize the MN Conservation Corp to perform the labor required for the project.

This work was scheduled as weather and time permitted. The MN Conservation Crew ranged from four to eight employees each day and spent on average 20 - 40 days on-site each year to complete the work.

MATERIALS AND METHODS

Native cedar trees were the material that was used to anchor to the stream banks to reduce erosion and replace sediment that had been lost throughout the years. These trees were cut from neighboring landowners' sites and were delivered to the project sites by a private contractor.

Most of the stream banks that were treated had bank heights ranging between six and twelve feet. A majority of the eroded slopes were vertical.

Cedar trees were installed against the banks using 1/8" aircraft cable and then secured with duckbill anchors. Where banks exceeded eight feet in height, double stacking of cedar trees were installed. On reaches that were fragmented and were extremely unstable, 24 inch earth anchors were used in place of the duckbill anchors.

RESULTS AND DISCUSSION

To date this project has been a tremendous success story. Landowners were grateful and very pleased with the whole experience and the work that was accomplished.

Project partners included Root River Soil & Water Conservation District, MN Corn Growers Association, MN Conservation Corp, MN DNR, Houston County Highway Department, Trout Unlimited, local contractors and area landowners. Each partner played a significant role.

The word soon spread on the project delivery and our conservation office has since been contacted time and time again by other landowners that are struggling with their stream banks and are interested in technical and financial assistance.

CONCLUSIONS

Land stewardship, natural resource conservation and clean water benefit everyone. Landowners depend on professionals that can offer sound advice and technical assistance to address their concerns and issues. Landowners continually seek options and tools that can meet their needs.

The stream bank revetment project would not have been possible without the financial assistance of the MN Corn Growers Association. We would like to extend a sincere thank you for all that you have done and the work that has been accomplished.

EDUCATION, OUTREACH, AND PUBLICATIONS

Field days and media coverage:

July 22, 2016 - In conjunction with the “Bluff County Conservation Tour” sponsored by MN Farm Bureau, the Houston County commissioners, state legislatures along with the public, totaling approximately 100 individuals, had an opportunity to view the project success from prior years and discuss the future cedar tree revetment project. SWCD staff gave a presentation on the project. A follow-up publication of the project was highlighted in *The Farmer* magazine and a local newspaper.

October 14, 2016 - A field day was hosted by the Root River SWCD at the Robert Breitenbach farm. Those invited included agency staff from Minnesota DNR, Soil & Water Conservation board of supervisors and staff, Houston County Water Plan Committee, Crooked Creek Watershed District Board, Natural Resource Conservation Services (NRCS), Trout Unlimited, Conservation Corp-MN, MN Corn Growers Association along with area neighbors, project site landowners, contractors and newspaper media. Those in attendance included Bryan Mehus, area neighbor; Jeff Hastings, Trout Unlimited; David Skauge, contractor; Bob Breitenbach, landowner; Paul Meints, MN Corn Growers Association; Dustin Looman & Zach Dieterman and work crew, Conservation Corp-MN, Jean Meiners, Dan Wermager, Dave Walter and Bob Scanlan, Root River SWCD staff.

October 12, 2017 – Root River SWCD sponsored a project site showing inviting area agency staff from Minnesota DNR, Soil & Water Conservation board of supervisors and staff, Houston County Commissioners, Houston County Water Plan Committee, Crooked Creek Watershed District Board, Natural Resource Conservation Services (NRCS), Trout Unlimited, Conservation Corp-MN, MN Corn Growers Association along with area neighbors, project site landowners, contractors and newspaper media. Those attending included Cecil Graf, Glen Kruse, Jerry Welke Root River Soil & Water Conservation board supervisors; Tim & Gwen Nelson, contractor; Bryan & Joni Mehus, landowners; Machele Bollman, NRCS; Dustin Looman & Zach Dieterman and ten work crew, Conservation Corp-MN; Dave Walter and Bob Scanlan, Root River SWCD staff. Project history was reviewed in addition to 2017 project accomplishments and future revetment goals.

REFERENCES

Buxengard, Jan Lee. “Bluff county conservation... The real story.” Caledonia Argus (August 16, 2016).

Buxengard, Jan Lee. "Bus tour participants get close look at Bluff Country conservation efforts." Spring Grove Herald (August 23, 2016).

Buxengard, Jan Lee. "Seed production, water quality focus of day-long tour." Houston County News (August 31, 2016).

Mohr, Paula "Conservation in bluff county." The Farmer (September 2016), pg. 4.

Henry, Ryan. "Conservation partnership continues on Riceford Creek." Houston County News (October 24, 2016).

Scanlan, Bob. "Conservation partnership continues on Riceford Creek." Caledonia Argus (October 25, 2016).

"Conservation Partnership continues on Riceford Creek." Spring Grove Herald (October 26, 2016), pg.8.

McGonigle, Daniel E., General Manager. "Conservation Corps completes their work for another year on the stream bank revetment project." Caledonia Argus (October 20, 2017).

Dogwiler, Toby. "Riceford Creek Stream Bank Revetment Prioritization and Evaluation." (December 4, 2017).