



Crow Wing Soil and Water Conservation District

2013-Actively protecting, restoring, and planning for healthy waters, soils, and habitat!

Good planning = quality habitat and protection of 51 acres in Deerwood Luke Magness Property

*With SWCD assistance Forest Stewardship Plan was written and implemented
Result: Planted 2000 spruce, fir, & white cedar
Future: Currently working with SWCD to put 29 acres in Wild Rice Conservation Easement*

Wild Rice Conservation Easements
Forest Stewardship Plans
Water Quality Landscaping
Shoreline Habitat Restoration
Invasive Non-Native Plant Control
Removed 5 acres of buckthorn on bike trail adjacent to Mississippi
Water Quality Testing
Local Contactor Training
Stormwater Plan
Wildlife Habitat
Forest Stand Improvement



Problem: Declining water quality trend on popular Trout lake and a public access with stormwater runoff issues



Solution: A plan that intercepts, filters, & absorbs runoff utilizing native plant communities and trains contractors, lgu staff, and technicians in planning and installation!

2013 Accomplishments

Mission: To work cooperatively with the public, nonprofit organizations, and governmental entities in protecting our water and land resources through the use of conservation practices; providing local leadership for the prudent use and conservation of water, soil, and associated resources while serving as a local natural resource information center.



BWSR Clean Water Fund Projects:

- ❖ Completed 79 water quality projects.
- ❖ Partnered with 53 CWC landowners, resorts, and businesses.
- ❖ Installed projects adjacent to 4 streams and 17 lakes.
- ❖ Planted approximately 1.1 professional football fields with native plants (64,545 square feet).
- ❖ 120 citizens volunteered over 1000 hours to help prep, install and maintain projects.

Received over 1/2 a million dollars in Clean Water Funds.



Funding: BWSR Clean Water Legacy, Moonlight Bay, Bar Harbor

- ❖ Replaced existing sod along 375 feet of Gull Lake shoreline with a 7500 square feet native buffer.
- ❖ Planted over 3000 native plants grasses, forbs, sedges, flowers, and shrubs.
- ❖ Conservation Corps of Minnesota and Iowa help plant this project.
- ❖ Over 45 residents attended Shoreline buffer workshop and planting at Moonlight Bay in Crosslake.

Completed in 2013



50 ¢ of every \$ 1 spent: pays local contractors for labor, plants and materials.





Whiskey Creek Polluted Runoff Study

- ❖ Identified the current health of the Little Buffalo Creek in each drainage area.
- ❖ Calculated runoff loads based off the subwatershed.
- ❖ Quantified and ranked pollutant removal based on cost.
- ❖ Targeted locations for best management practices.



Little Buffalo Creek Subwatersheds



Load Reduction Predictions

Leveraged \$ 329,750.00 BWSR Clean Water Legacy Grant funds to remove polluted runoff from the Mississippi River.

Partners:
City of Brainerd
Central Lakes College
BWSR
CWC

	Raingarden, no walls (RG-NW)	Raingarden, partial walls (RG-PW)
Top Area	250 ft ²	250 ft ²
Depth	1-ft	1-ft
Volume	250 ft ³	250 ft ³
Infiltration Rate	1.25 in/hr	1.25 in/hr
Sediment forebay	Yes	Yes

Table 6. Catchment 11 loading and treatment

Cost-Benefit Analysis	EXISTING CONDITIONS		RETROFIT OPTIONS					
	Base Loading	Current Treatment	Marginal Network Treatment By BMP					
			Level 1 (10%TP)		Level 2 (20%TP)		Level 3	
Existing BMP performance		0.0%	None	None %	None	None %	None	None %
TP (lb/yr)	87.1	0.0	8.6	9.9	17.2	19.7		0.0
TSS (lb/yr)	27430	0	7274	26.5	10588	38.6		0.0
Volume (acre-feet/yr)	88.59	0.00	7.33	8.3	15.30	17.3		0.0
Square feet of practice			2900		6770			
BMP Type	No Treatment		Simple Bioretention		Moderately Complex Bioretention		NA	
Materials Labor/Design			\$35,010		\$108,530			
Admin Costs/100-hr			\$157		\$65			
Total Project Cost			\$39,567		\$114,252			
Annual O&M			\$2,175		\$5,078			
Term Cost/lb/yr (30 yr)			\$406		\$517			

Targeted Locations for Projects

Project will begin Spring 2013!



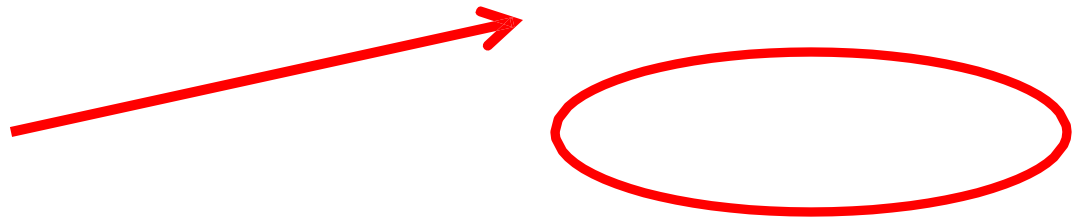
2013 Cost Share Projects

Stormwater reduction and natural buffer restoration

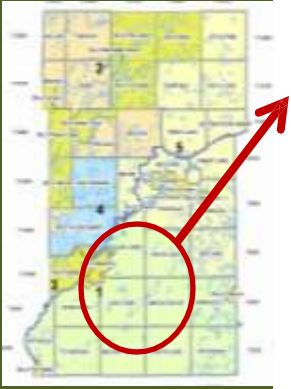
- ❖ Joint Powers Board Engineer designed a plan.
- ❖ Replaced culvert materials included: metal pipe, non-woven, geotextile, road gravel, rock riprap, topsoil, seed, and erosion control blanket.

Funding:
BWSR State
Cost-Share
Paradise
Shores
Association

Before



After





Partners:
 Brainerd
 Alternative
 Learning
 School
 MN Natives
 Landscape

Tree and Plant Sale

- ❖ Sold over 21,000 native trees and shrubs and 2,000 native plants.
- ❖ Supported Badoura Nursery and private MN state growers.
- ❖ Twenty volunteers helped with annual tree sale preparation.
- ❖ Grant funds helped landowners fund shoreline buffers, raingardens, and large scale tree planting projects.



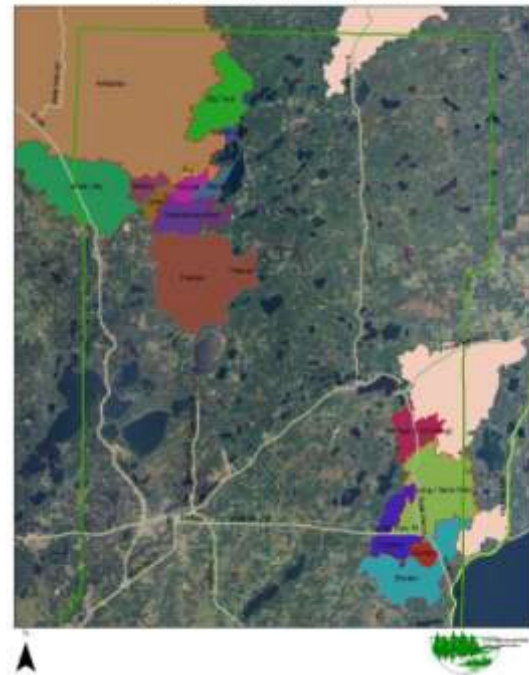
Reduced: 136,000 gallons of stormwater runoff and 120,000 tons of atmospheric carbon. www.trebenefits.com

Trees are the Roots of Good Fishing

Clean Water Legacy Forest Stewardship Project-
 Tulibee Lake Watersheds

- ❖ Assist private landowners to actively manage forestlands and maintain forest cover within tulibee lake areas.
- ❖ Connect private forest land management with water quality protection and ensures long-term quality sport fishing.
- ❖ SWCD has targeted 16 tulibee lakedshed areas in CWC.

Tulibee lakedsheds in CWC



Partners: MN DNR, BWSR, and
 Private Landowners



2013 SWCD Programs

- ❖ Brainerd Community Mississippi Revitalization: Stormwater Runoff Retrofit
 - ❖ Partners: BWSR, Central Lakes College, and City of Brainerd
- ❖ Whiskey Creek: Stormwater Runoff Analysis
 - ❖ Partners: Northland Arboretum, MNDOT, BWSR, University of Minnesota Extension, and City of Baxter and City of Brainerd
- ❖ Shoreline BMP Youtube Videos and Contractor Workshops:
 - Partners: MN DNR and U of M Extension
 - ❖ How to restore your shore with coir logs: <http://youtu.be/71q6eH0WTkQ>
 - ❖ How to restore your shore with native plants: <http://youtu.be/3Z1paPclVeM>
 - ❖ How to stabilize your shore with erosion control fabric: <http://youtu.be/d81wN8xzqjw>
 - ❖ How to install a soil wrap slope break: http://youtu.be/86H_lzreOLg
 - ❖ How to stabilize your shoreline with live fascines: <http://youtu.be/7GSyOlZj4KI>
- ❖ Trout Lake Boat Access: Stormwater Project
 - ❖ Partners: MN DNR, WAPOA, U.S. Army Corps of Engineers
- ❖ Wild Rice: Conservation Easements Program
 - ❖ Partners: SWCD's, MN DNR, BWSR, and Ducks

Unlimited