



Crow Wing Soil and Water Conservation District



WORKING TOGETHER FOR CLEAN WATER
Restoring Natural Hydrology to Crow Wing County

**Rain Gardens:
Nature's Water Filter:**

- 1. Rain gardens are planted with native prairie grasses, flowers, and shrubs.
- 2. Rain gardens capture the stormwater runoff from adjacent parking lots and buildings.
- 3. Fast draining soils and long rooted plants absorb nutrients and remove pollutants from the runoff as it passes through.

Breezy Point Stormwater Project

Now water that reaches Pelican Lake will be healthy for plants, fish and people!
Result = A cleaner Pelican Lake



2012 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.



Bar Harbor and Moonlight Bay

- ❖ 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.



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



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



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



Mississippi River 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

Partners:
City of Brainerd
Central Lakes College
BWSR
CWC

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



Load Reduction Predictions

	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	Max %	None	Max %	None	Max %
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-yr			\$157		\$85			
Total Project Cost			\$39,557		\$114,252			
Annual O&M			\$2,175		\$5,078			
Term Cost/yr (30-yr)			\$406		\$517			

Targeted Locations for Projects

Project will begin Spring 2013!



2012 June Flood Erosion Project

Paradise Shores Road Washout into Upper South Long Lake.

- ❖ 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.



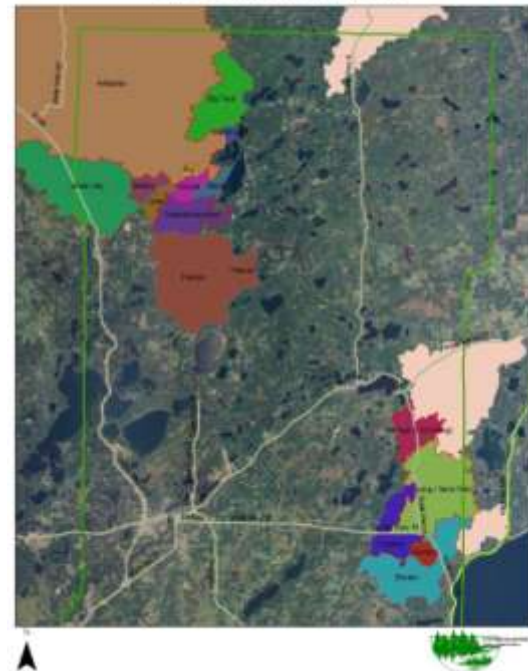
Reduced: 136,000 gallons of stormwater runoff and 120,000 tons of atmospheric carbon. www.trebenefits.com

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 lakeshed areas in CWC.

Tulibee lakesheds in CWC



Partners: MN DNR, BWSR, and Private Landowners



2013 SWCD New 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/3Z1paPcIVeM>
 - ❖ How to stabilize your shore with erosion control fabric: <http://youtu.be/d81wN8xzqiw>
 - ❖ How to install a soil wrap slope break: http://youtu.be/86H_IzreOLg
 - ❖ How to stabilize your shoreline with live fascines: <http://youtu.be/7GSyOlZi4KI>
- ❖ 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