

The Clearwater SWCD Conservator



Volume 4, Issue 3

Fall 2013

Clearwater
SWCD...

- Provides **information** to residents doing conservation projects along lakes, rivers & wetlands
- Offers **cost sharing** on conservation projects that prevent erosion & protect water quality
- Brings **conservation dollars** to local farmers, lakeshore owners, contractors & other county residents

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Preserving Pine Lake

By Nathan Nordlund, District Technician, Clearwater SWCD

Significant losses of lakeshore mark the eastern edge of Pine Lake. Anecdotal reports of 20, 30 and even 50 feet of lakeshore loss have been made. Without a doubt the water's edge is closer to property owners' doorsteps today than it was a generation or two ago.

Conversion of shoreline vegetation from deeply rooted native plants to the typical shallow rooted turf grass used for most lawns has destabilized the shoreline. This allows ice and wave action to carve away at the exposed soil. Marching inland, Pine Lake continues to consume lakefront property

often without notice or combat from property owners.

Darrell Boucher was the first landowner on Pine Lake to take advantage of Clean Water Fund grant dollars to stop the trend of lakeshore loss on his Pine Lake property. In 2012, Clearwater Soil & Water Conservation District was awarded grant dollars



Colorful native plants add beauty and stability to the lakeshore upland from new rip rap installed along Pine Lake.

specifically for the purpose of protecting Pine Lake shoreline. Darrell worked with the SWCD to devise a plan that would halt

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Options for Coping with Drought

By Brooke Knick, Soil Conservation Technician, NRCS

Rain Data Statistics for Clearwater County

As we all know rain is erratic. It never rains when it's needed, and it always pours right after the hay is cut. And for some reason there's a monsoon in the middle of bean harvest. Also, lately it seems like there are large stretches of no rainfall which causes the sandy knobs and hilltops to wilt and wither.

The chart on Page 4 compares this year's average monthly

rain to the last five years and to the 101 year average for the University of Minnesota rain gauge located in Itasca State Park. The month of August was dry for Clearwater County. In August the county received 2.3 inches less than the 101 year average for Itasca. From May to August, Clearwater County is 3.2 inches below the 101 year average for Itasca.

NRCS Options to Cope with Rain Shortages

When rainfall is significantly lower than ideal, it is

important to protect the lighter and sandier soils.

Leaving crop residue on top of the soil protects it from the sun and helps retain moisture.



Crop residues conserve moisture.

Crop residue is basically mulch for the crop fields. And just like mulch, crop residue

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Would You Like Financial Assistance for Conservation Practices?

By Kathy Rasch, District Manager, Clearwater SWCD

Did you know you can get financial assistance to help protect or improve water quality in Clearwater County?

The Clearwater SWCD has funds available through the State Cost Share Program to assist landowners with eligible projects. Possible projects range from sealing abandoned wells to prevent groundwater contamination, to planting windbreaks to reduce soil loss, to stabilization of eroding sites along shorelines or gullies in cropland.

Improvement of existing windbreaks can be included.



Photo courtesy of USDA NRCS

Buffers along waterways protect water quality and reduce soil loss.

BUFFERS and FILTERSTRIPS
Both serve to reduce runoff and

designed to collect and hold sediment or debris. Rain Gardens are included in this category.

GRASSED WATERWAY

A natural or constructed watercourse with permanent vegetation helps to reduce soil loss while transporting runoff from fields and other erodible areas. Grassed waterways keep sediment out of lakes, streams and wetlands.

Additional eligible conservation practices include **FEEDLOT/**

Conservation at Work: The Clearwater SWCD has shared the cost of various projects featured in this newsletter, including the Pine Lake Shoreland Restoration featured on the cover and the Clearbrook Sediment Ponds on page 3. If you would like to plan a conservation project with our financial assistance, give us a call to discuss details!

What do these projects have in common? They all help keep soil and other pollutants out of our precious lakes, streams and groundwater and ensure clean water for future generations.

Eligible conservation practices commonly used in this area include:

WINDBREAK ESTABLISHMENT OR RENOVATION

Planting single or multiple rows of trees and/or shrubs to provide protection from the prevailing winds and reduce cropland soil loss.



Photo courtesy of USDA NRCS

A mature windbreak protects crops and livestock while also supporting wildlife, birds and beneficial insects.

prevent soil or other contaminants from entering surface waters. Trees or other permanent vegetation strips are established between cropland, pastures, or other disturbed areas and lakes, streams or wetlands.

SHELTERBELT PLANTING OR RENOVATION

Planting trees and/or shrubs around buildings and homesteads to provide protection from wind and snow.

STREAMBANK, SHORELAND and ROADSIDE PROTECTION

The use of vegetation, rip rap or other means to stabilize and protect streambanks, lakeshore and other water channels from erosion.

CRITICAL AREA PLANTING

Establishing permanent vegetation on eroding or exposed sites where conditions make it difficult to establish vegetation with normal planting practices.

SEDIMENT BASINS

A basin, pond or structure



Photo courtesy of USDA NRCS

Grassed waterways reduce soil and nutrient loss from working lands.

WASTEWATER RUNOFF CONTROL and UNUSED WELLSEALING .

All conservation practices and sites must meet certain eligibility requirements. To apply for cost share or for questions on the State Cost Share Program, stop and visit (312 Main Ave N, Bagley) or call the Clearwater Soil and Water Conservation District office (218-694-6845).



The Low Cost and High Benefits of the Clearbrook Sediment Pond

By Brad Kennedy, Engineer Technician, North Central Minnesota SWCD's Joint Powers Board

In 2008, a study of the City of Clearbrook's urban runoff done by the Clearwater SWCD indicated that each year nearly 52,000 pounds of suspended solids were flowing into Clear Brook, a tributary of the already impaired Silver Creek. Stormwater can often carry oil, chemicals, toxic metals, litter and disease-causing organisms. It can also overwhelm streams and rivers by adding to erosion issues as well as hurt or even eliminate fish and other aquatic species.

Best management practices (BMPs), such as stormwater treatment ponds, can lessen these water quality issues that impact even the smallest communities. Water testing data collected by the Clearwater SWCD helped to identify priority areas where BMPs could resolve these

issues. The North Central Minnesota SWCD's Joint Powers Board engineering staff then produced design plans for multiple treatment ponds in Clearbrook.

An area defined as the North Downtown sub-watershed contributes 16% of the total runoff in Clearbrook due to its high concentration of impervious surfaces. Impervious surfaces such as streets and buildings do not allow the natural infiltration of water into the ground, resulting in increased runoff. An open area owned by the City proved to be an ideal site for treatment. In the fall of 2012, a stormwater treatment pond was constructed. Funding from both the Red Lake Watershed District and the Clearwater SWCD was used to complete the project.

The existing stormwater outlet for the North Downtown sub-watershed that had been discharging pollutants directly



City land in Clearbrook, prior to sediment pond installation.

into Clear Brook was simply cut back and now discharges into the pond. The treatment pond consists of two separate basins. When the runoff first reaches the pond, a settling basin for preliminary treatment of sediment collects the runoff before filtering through a rock weir into the main basin. The treated water is then discharged into Clear Brook through a controlled outlet.

Projects such as this can provide a considerable benefit to water quality for a relatively low cost. A variety of options for reducing runoff from any property are available. Anyone interested should contact your local SWCD for more information on how you can help improve and protect our valuable water resources.



The North Central Minnesota SWCD's Joint Powers Board provides engineering assistance to landowners, via soil and water conservation districts, for a variety of non-point water quality management practices.

Brad Kennedy is an Engineer Technician at the North Central Minnesota SWCD's Joint Powers Board. He grew up in Red Lake Falls, has a degree in Land Surveying/Civil Engineering Technology and has been with the JPB in Bemidji for more than 4 years.

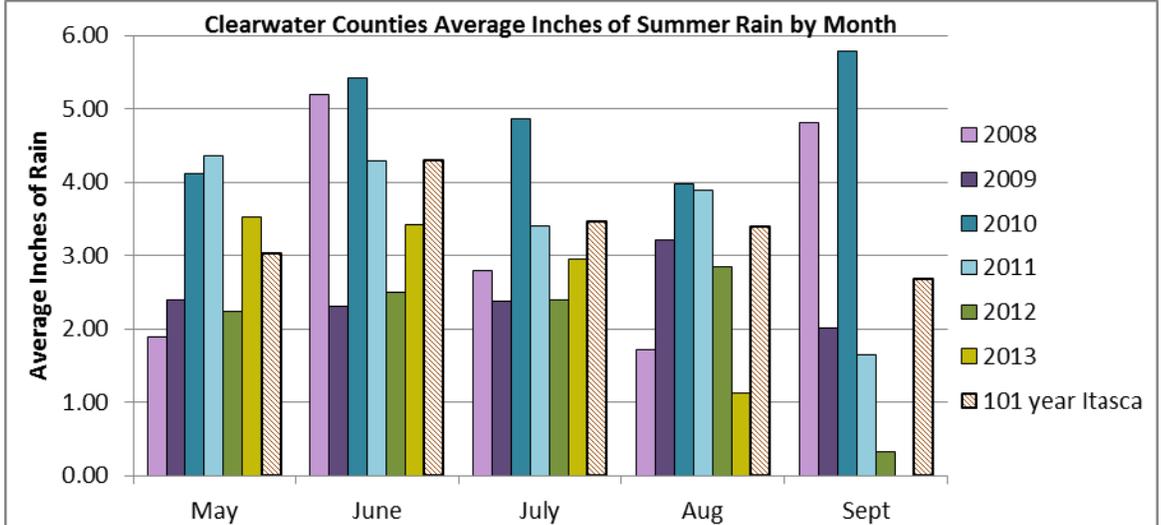


The finished Clearbrook sediment pond has a low level of water in both basins during summer 2013.

Conservation at Work: Watering trees before winter makes sense when you consider that "a mature tree can lose up to 238 gallons of water per day under warm, sunny conditions" —and we sure had a lot of those days in 2013!

(Info according to Vrecenak in <http://www.mymnnesotawoods.umn.edu/2008/04/seasonal-care-of-trees-shrubs-watering/>)

Drought Options, continued from page 1



This chart shows the last 6 years of average summer monthly rain for Clearwater County. This data is compared to the 101 year average rain data from the UMN rain gauge in Itasca. Chart data comes from the monthly rain gauge reports from Clearwater County's volunteer climatologists. No rain data has been collected yet for September 2013.

suppresses weeds and helps rain to better infiltrate into the soil profile. As the crop residue breaks down, it will also add organic matter to the soil.

To help the residue stay on top, soil should be tilled as little as possible. In dryer times, tillage should be especially avoided because it forces the water out of the soil and breaks up soil aggregates. If tillage is part of your farming practices, try to use straight points and sweeps on chisel plows instead of twisted points. Twisted points can bury 20% more residue. Reduce speed when tilling – slower tillage speed leaves more residue on the soil surface. Ideally, consider no-tilling or strip tilling.

Soil should always be covered by growing plants and their residues. Soil should rarely be visible from above. This is true regardless of land use (cropland, hayland, or pasture). Some of you may be thinking, "That's a great thought, but I have no pasture left, and I can fetch a decent dollar for a round

bale of wheat straw." As a conservationist in recent droughts, I recommend leaving the straw residue. However, if this is not an option, a prescribed grazing system or cover crops may help alleviate future drought shortages.



In a Prescribed Grazing System, fence subdivides a large pasture into smaller paddocks.

A Prescribed Grazing System subdivides larger pastures to force cattle to more uniformly graze the entire pasture. If pasture grass is continuously overgrazed and not allowed to recover, the grasses will die back, and unpalatable weeds will flourish. Cattle don't like to stray more than 800 feet from a water

supply, so commonly they will overgraze the area around the trough. Using pipeline to spread out water tanks puts water closer to growing grass. Using paddocks gives the grass a rest period to recover and grow.

A cover crop is a living residue that can be used to protect the soil throughout the growing season. Or a cover crop can be used to protect soil after the cash crop is removed. Cover crops can help fertilize cash crops, break up compaction, and provide fall forage for cattle. Turnips and radishes provide great forage and can be used to quickly cover the winter calving/feeding area. Turnips and radishes can also be used to break up compaction.

The Natural Resources Conservation Service (NRCS) has technical and financial assistance to help farm in a more drought friendly way. There is financial assistance to convert from a

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the progression of water toward his doorstep.

Ice action working against the unprotected shoreline was a major consideration in designing Darrell's lakeshore protection plan. Rock rip rap was laid at a flatter 5:1 slope, in comparison to the typical 3:1 slope, allowing the ice to ride over the rip rap, instead of push against and ridging the shoreline. The shoreline was further protected by planting a buffer of native

plants that secure lakeshore soils with extensive root structures.

Darrell will enjoy the beauty of the wildflowers as the native plant buffer develops. He will also enjoy the confidence in knowing he has protected his lakeshore for generations to come. The list of beneficiaries goes well beyond Darrell and his family though. We all benefit from improved water quality when lakeshore owners do their part to secure shorelines. Sediment and phosphorous pollute the water when shorelines

are allowed to erode. This pollution fuels excess plant and algae growth which reduces the recreational value of lakes. Landowners such as Darrell do us all a favor by taking an active role in protecting the waters we all enjoy.

Clean Water Fund grants come from the Clean Water, Land and Legacy Amendment approved by Minnesota voters in 2008.



Conservation at Work: Clearwater SWCD is in process of protecting and restoring **over 350 feet** of Pine Lake shoreline, thanks to Clean Water Fund and State Cost Share grants.

Fair Days for Soil Health

By Emily Lindell, Office Manager, Clearwater SWCD

"What is that?" an elementary school-aged boy asked as he looked over the two chunks of soil suspended in tall, clear glasses of water. As the clump of soil in one glass disintegrated quickly and collected at the bottom of the glass, I pointed out how the other piece largely held its shape, allowing only a trace of dirt to drift to the bottom.

What was the difference in these seemingly similar soils? I explained to the youth that one chunk was conventionally tilled soil whose structure had been broken apart repeatedly—that was the sample now sitting at the bottom of the first glass. The second was a piece of no-till soil in which organic matter kept the smaller particles knit together, allowing it to hold water and not be washed away.

This soil health experiment, called a slake test, was just one of the interactive exhibits on soil health at the Clearwater Soil and Water Conservation District booth at the 2013 Clearwater County Fair. In addition, fairgoers young and old got their hands dirty as they tested five different soil samples to determine the soil types. Fair visitors also took free literature on soil health, shoreland stewardship and invasive species. Others bought plat books on fair special and many entered to win conservation-themed prizes.

In the adult drawing, Kylie Calder of McIntosh won a free bundle of trees to plant in Spring 2014. Savanna Rankin (pictured), a 6th grader from Clearbrook-Gonvick, won two colorful nature identification guide books in the youth division. Tucker Iverson of Bemidji won the kids' prize by guessing the number of pine cones in a large jar. His prize was a Mississippi River Headwaters Coloring Book and some adhesive stars.

Clearwater SWCD thanks everyone who visited our booth to learn about soil health and other important conservation issues. We look forward to meeting the community at the fair again next year and in the meantime welcome you to visit our office at 312 Main Avenue North in Bagley.

Clearwater SWCD also thanks the Natural Resources Conservation Service (NRCS) Bagley Field Office for sharing their slake test and other soil health materials for our booth. If you are interested in improving your soil's health or other conservation practices, Clearwater SWCD and the NRCS are here to help! Call us or stop by for more information!

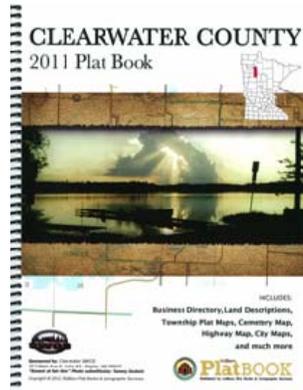


Savanna Rankin won two fun and practical nature identification guides in the youth division.



Hunting season is upon us again—time to buy a plat book!

Clearwater SWCD carries the newest full color plat book edition available. Stop by our office today to purchase a book for only \$28.00 + tax.



Clearwater Soil and Water Conservation District

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Our mission is simple - to promote the wise use and improvement of our county resources, in order that future generations will inherit an economically viable county that has made wise choices in resource management.

Drought, continued from page 4

tillage system to a no-till residue management system, to install a prescribed grazing system and to try out cover crops on your farm.

If you are interested in any of these practices, please visit the NRCS at our office: 312 Main Ave N in Bagley. Or call (218) 694-6584 ext. 3.

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Now is the time of year to protect your trees and shrubs from winter damage!

- Use screens around trunks to protect from rodents
- Wrap young trunks in light-colored material to prevent sunscald
- Spray generously with a repellent such as **Plantskydd*** to discourage deer browse
- Use fences to exclude deer from new tree plantings and bud cap young white pines
- Mulch trees with straw or woodchips to protect sensitive roots from extreme cold
- Additional tips at: www.extension.umn.edu/distribution/horticulture/DG1411.html

Remember Clearwater SWCD sells **Plantskydd** in 1 and 2.2 lb boxes!

