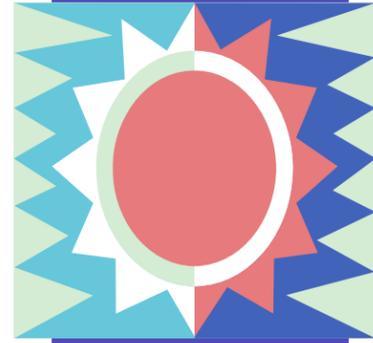


# Sauk River Watershed District



## Buffers are a Shore Thing

A recent study done by University of Wisconsin researcher Stephen R. Carpenter, shows that phosphorus that builds up in lakes may have long lasting ecological impacts. It could take hundreds of years for lakes to rid themselves of the excess nutrient.

Nutrients like nitrogen and phosphorus, in conjunction with sediment from erosion, can cause major problems for our local lakes and streams. An excessive amount of nutrients in the water induces a process called eutrophication, which causes algae to grow at an accelerated rate. Algae along with sediment in the water makes it difficult for sunlight to penetrate much further than the surface of the water. Also, aquatic plants that need sunlight to produce oxygen through photosynthesis do not receive enough light. When this happens, the dissolved oxygen in the water is reduced, which can result in fish kills.

There are several things that can be done to reduce the chances of this happening to your lake. Most fertilizers have an NPK ratio (nitrogen, phosphorus, and potassium ratio) on the bag. Buy fertilizer that does

not have any phosphorus. In fact, in the state of Minnesota it is illegal to use fertilizers that contain phosphorus, unless a soil test recommends its use. Do not apply fertilizer as often as you might think. Many times people apply fertilizer to their lawns every spring or early summer. This is not necessary in many cases, because there is enough nutrients in the soil already. If you live on lakeshore property, instead of adding to nutrient runoff, harness your already nutrient rich lake by using it to water your yard (via water pump and sprinklers).

Perhaps one of the best methods for reducing the amount of nutrients from entering our lakes and streams is to make runoff filter through something called a "buffer" before it enters a body of water. These buffers prevent erosion as well as for filtering nutrients from the water. There are many other beneficial reasons for creating a buffer strip on lakeshore properties; it reduces flooding, creates fish and wildlife habitat, discourages nuisance geese, and also provides privacy. It is especially advantageous for

shorelines on a steep incline, by making that area relatively low maintenance (no mowing).

Buffer strips consist of native species of plants that help to reduce erosion from



water or wave action. This natural erosion control method uses the deep root structure of these native plants to hold the soil in place, instead of letting it wash into a lake or stream.

Cost share programs are available through the Sauk River Watershed District. The maximum cost share that a single project may receive is 50% of the total eligible project cost. So call the Sauk River Watershed District today and see what you can do to help your local lakes and streams.

## Description of the District

The Sauk River Watershed District is situated in central Minnesota. It encompasses an area which begins above the Sauk River's origin in Lake Osakis and extends in a southeasterly direction to the river's confluence with the Mississippi River in St. Cloud.

The District covers approximately 1,007 square miles across portions of 5 counties.

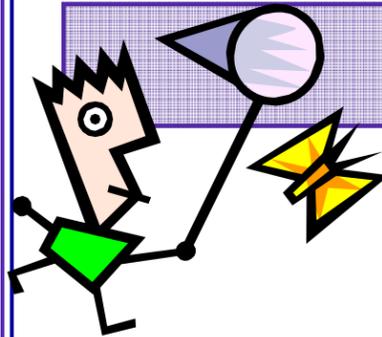
### AREA DISTRIBUTION BY COUNTY

	<u>Todd</u>	<u>Douglas</u>	<u>Pope</u>	<u>Meeker</u>	<u>Stearns</u>
Area (acres)	139,520	57,600	28,160	9,360	409,600
Area (Sq. Mi)	218	90	44	15	640
Watershed (%)	21.6	8.9	4.4	1.5	63.6
Lakes*	65	26	13	0	139
Lake Acres*	14,679	3,596	1,537	0	15,895
Lake Area (%)	41	10	4	0	45

\* includes several large wetlands

The primary use of land in the District is for agricultural purposes. However, the District does encompass several small metropolitan centers including a portion of St. Cloud.

## Playing with Bugs



bugs. Simply put on your favorite pair of waders, grab a net, and get in the water. Macro invertebrates are often times located by vegetation, attached to rocks, or underneath the sandy or rocky substrate.

After collecting the macroinvertebrates from a monitoring site, the bugs must be identified using a dichotomous key and a dissecting microscope. Once these bugs have been identified, a tolerance value can be assigned to them. Some macroinvertebrates have a higher tolerance for pollution, while others have a lower tolerance. If you catch many bugs with a high tolerance value and very few with low tolerance, then that indicates a highly polluted lake or stream.

The best time to do macroinvertebrate monitoring is the period after the snow and ice has melted and before the beginning of June. The reason for this is that at some point (typically in May) many macroinvertebrates leave their larval stage and emerge from the waters to begin their adult life.

Biological sampling of macroinvertebrates is very valuable information and can be used to support other related water quality data. To be safe it is always a good idea to have someone else with you when you enter a stream or lake to collect bugs, so grab a friend and go out and have some fun. Resources for monitoring are available at the SRWD.



*Thank You 2005 Volunteers for all your time, effort and energy given to help water quality!*

### Did You Know?

- The SRWD covers portions of Douglas, Pope, Todd, Stearns and Meeker Counties.
- The SRWD has 9 board members representing the 5 counties of the watershed.
- Meetings are held at 7PM at the District office on the 1st and 3rd Tuesdays of every month.
- The District monitors 20 streams and 11 lakes throughout the 1,007 square mile watershed.
- Services are provided to residents wishing to volunteer.
- The SRWD has an active education program for schools.
- Assistance is available for land use improvements that positively affect water quality.

COMING SOON!

Coming in September

SRWD Treasure chest visits to schools, clubs, and organizations.

Traveling library board available to area schools and libraries.

Teachers REGISTER NOW for SRWD staff visits this fall.

The Lake Ecology Program is looking for fourth through sixth grade teachers within the watershed that would be interested in training. Expenses paid, call today!



## Upcoming Events



### Sauk River Watershed District

524 Fourth Street South  
Sauk Centre MN, 56378  
(320)352-2231  
www.srwdmn.org

Send Comments and Questions to:  
srwd@srwdmn.org

## Available SRWD Cost Share Programs

### COST SHARE PROGRAM

Cost Share Funds are awarded to landowners as an incentive to make environmental improvements. These are grants available to citizens within designated watershed management areas of the Sauk River Watershed District. Cost Share Funds are currently available on a first-come, first-served basis until funding is depleted. Cost Share Funds cover 50% of eligible project costs. The SRWD applies for and receives cost share funds through grant applications.

### THE STATE REVOLVING FUND PROGRAM (SRF)

The State Revolving Fund Program (SRF) allows the watershed district to provide low-interest loans to citizens within designated sub-watersheds for various types of environmental improvements such as septic systems, manure management systems and erosion control projects. This program is unique because the repayment on loans is through special assessment placed on property taxes. The SRWD applies for and receives SRF funds through grant/loan applications.

### How to Apply

1. Contact the Sauk River Watershed District for an application.
2. The SRWD representative reviews the proposed project with the area Soil and Water Conservation District (SWCD).
3. Landowner works with the area SWCD to develop an approved design plan and cost estimate. Final plan and cost estimate is submitted to SRWD.
4. A contract agreement is generated between the SRWD and landowner. A signed and notarized contract agreement is required before the project can begin.
5. Project certification is completed by the area SWCD. Copy of certification is submitted to the SRWD.

6. Invoices are submitted to the SRWD for review. Payments are made directly to the contractor's for all eligible expenses. There are many activities that qualify for cost share dollars and low interest loans. Call Lynn at the SRWD today to determine if your project qualifies.

### SHORELINE AND RIPARIAN RESTORATION PROGRAM

Shoreline and riparian restoration corrects erosion problems and improves water quality on lakes and rivers. The Shoreline and Riparian Restoration Program helps landowners create buffer strips along the shoreline. These buffer strips use native grasses and flowers with extensive root systems to hold the shoreline in place, protecting it from the impacts of waves and ice. The Shoreline Restoration Program was created to help reduce runoff and pollution while increasing habitat.

### What Projects May Be Eligible?

- Conservation Buffers
- Shoreline Stabilization
- Protection of Shoreland Trees
- Preserve Wetlands
- Other Erosion Measures

### EROSION CONTROL PROGRAM

Erosion control focuses on reducing erosion by anchoring soil in place and slowing down the water moving across it. Soil erosion is a natural process, but development and agriculture may cause accelerated erosion. In areas like creeks and streams, sediment from erosion is harmful to habitat and has a significant effect on water quality. The Erosion Control Program was designed to reduce these harmful impacts.

### What Projects May Be Eligible?

- Conservation Tillage
- Contour Farming
- Crop Rotation
- Drainage Diversions
- Stormwater Detention Basins

### AG WASTE MANAGEMENT PROGRAM

Ag Waste Management is the practice of properly handling and storing animal waste products. Ag waste systems can be highly effective in removing sediment, nutrients, bacteria and oxygen demanding material. Ag Waste Management is important because feedlot runoff damages surface water by contributing to excessive algae growth, reducing oxygen in the water, and limiting recreational use.

### What Projects May Be Eligible?

- Animal Waste Storage Ponds
- Waste Storage Structures
- Other Manure Storage Areas

### LIVESTOCK EXCLUSION PROGRAM

Livestock exclusion prevents livestock from entering waterways. Livestock that have access to lakes and streams can increase the amount of sediment and nutrients in surface water by the direct input of animal wastes and by erosion of the stream bank and channel bottom, which improves water quality.

### What Projects May Be Eligible?

- Fencing Livestock to Prevent Waterway Entry
- Livestock Crossings
- Providing a Buffer Area Between the Fence and the Stream
- Stabilizing the Bank

## 2004 Lake Data from the SRWD



In order to interpret this data and see how these lakes compare with other lakes in the area, you must look at the ecoregional averages. The ecoregion in which these lakes fall is the North Central Hardwood Forest. The ecoregional averages for this set of data is:

**Total Phosphorus (ppb): 23 - 50**

**Secchi Disk (ft): 4.9 - 10.5**

**Chlorophyll a.k.a. Algae (ppb): 5 - 22**

ppb = parts per billion  
ft = feet



Lake Name	Total Phosphorus (ppb)	Secchi Disk (ft)	Chlorophyll (ppb)
<b>Big Birch</b>	27.278	13.16	4.895
<b>Big Sauk</b>	67.7	3.53	38.49
<b>Cedar Island</b>	83.333	4.83	33.67
<b>Horseshoe</b>	113.4	4.58	70.87
<b>Knaus</b>	92.7	2.75	59.9
<b>Krays</b>	123.5	2.67	60.02
<b>Osakis</b>	39.375	9.56	12.567
<b>Schneider</b>	97.7	9.33	18.011
<b>Smith</b>	48.3	9.0	20.978
<b>Zumwalde</b>	114.3	2.36	44.25