

# Agenda

1. What we know:  
Skogman Lake Study  
Water Quality Data  
Skogman Shoreline
2. Knowing Your Shore:  
Do I have a resource Concern?
3. Shoreline Restorations:  
Complex Solution  
Basic Solutions
4. Next Steps



# Workshop Goals.

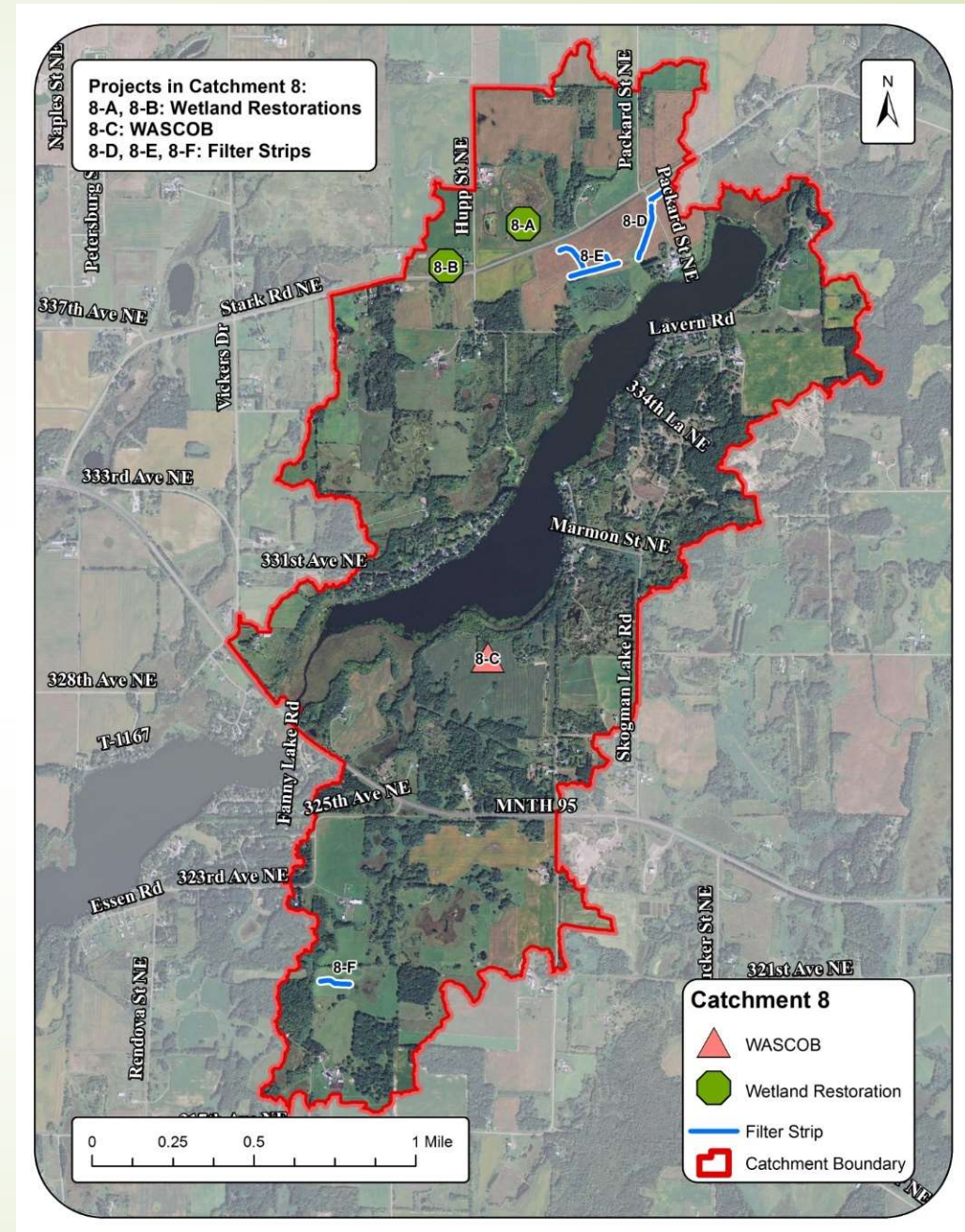
- ▶ Why are shoreline restorations beneficial?
- ▶ Do I have a resource concern on my property?
- ▶ How can I address a resource concern?
- ▶ What are my next steps?



# Skogman Lake Study

- 2014 Watershed report
- 2022 Shoreline Survey Update
- 2023 Nearshore and Rural Watershed Update

Township	Cambridge
MN Lake ID	3002200
# of Public Boat Access	1
Aquatic Invasive Species	Eurasian Watermilfoil, Curly-leaf Pondweed, purple loosestrife
Surface Area	228
Littoral Area (<15ft deep)	135
Maximum Depth	36
Lake Depth Classification	Deep
Lake Health Status	Impaired
SWCD Priority Lake	Yes



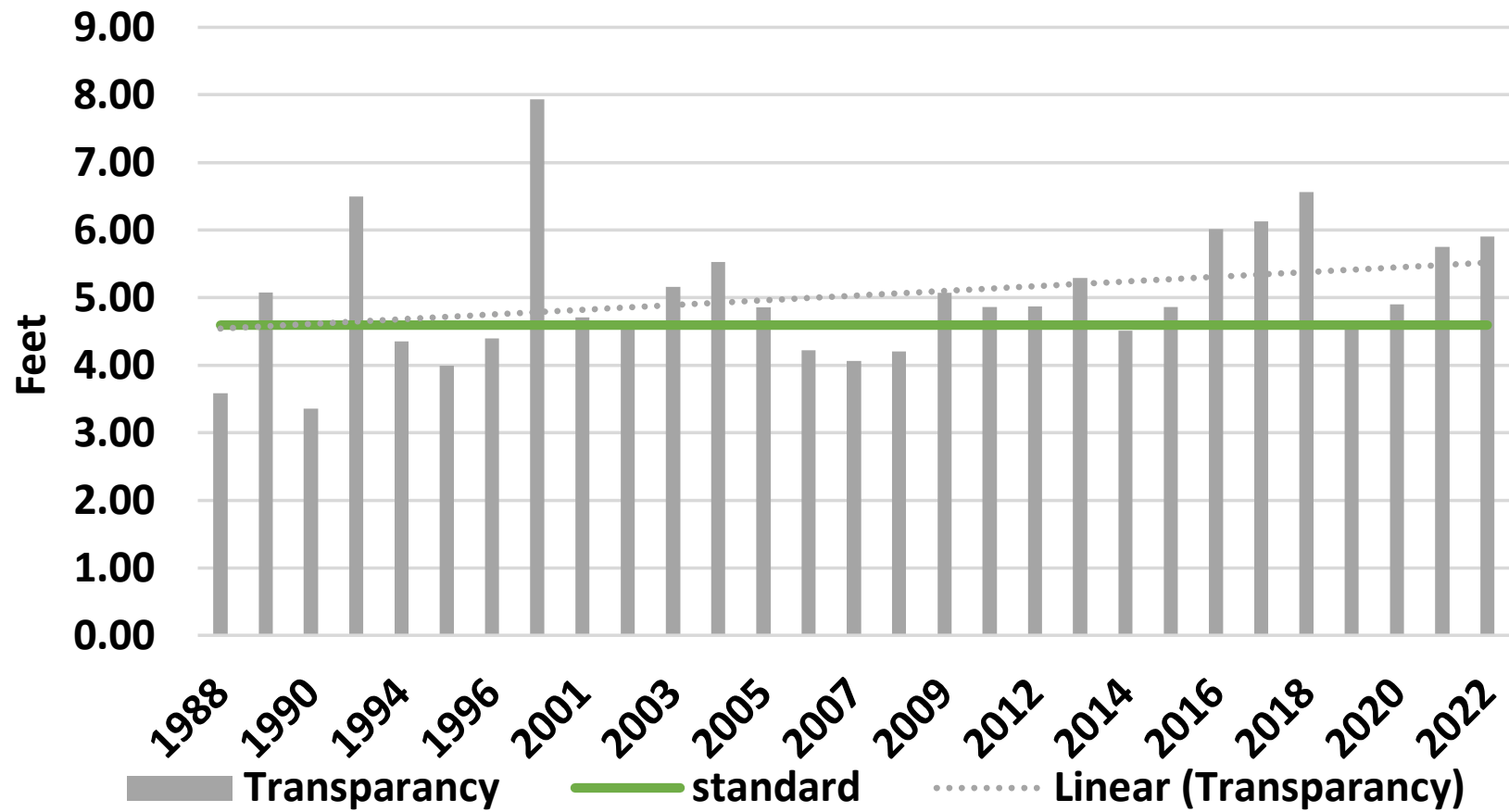


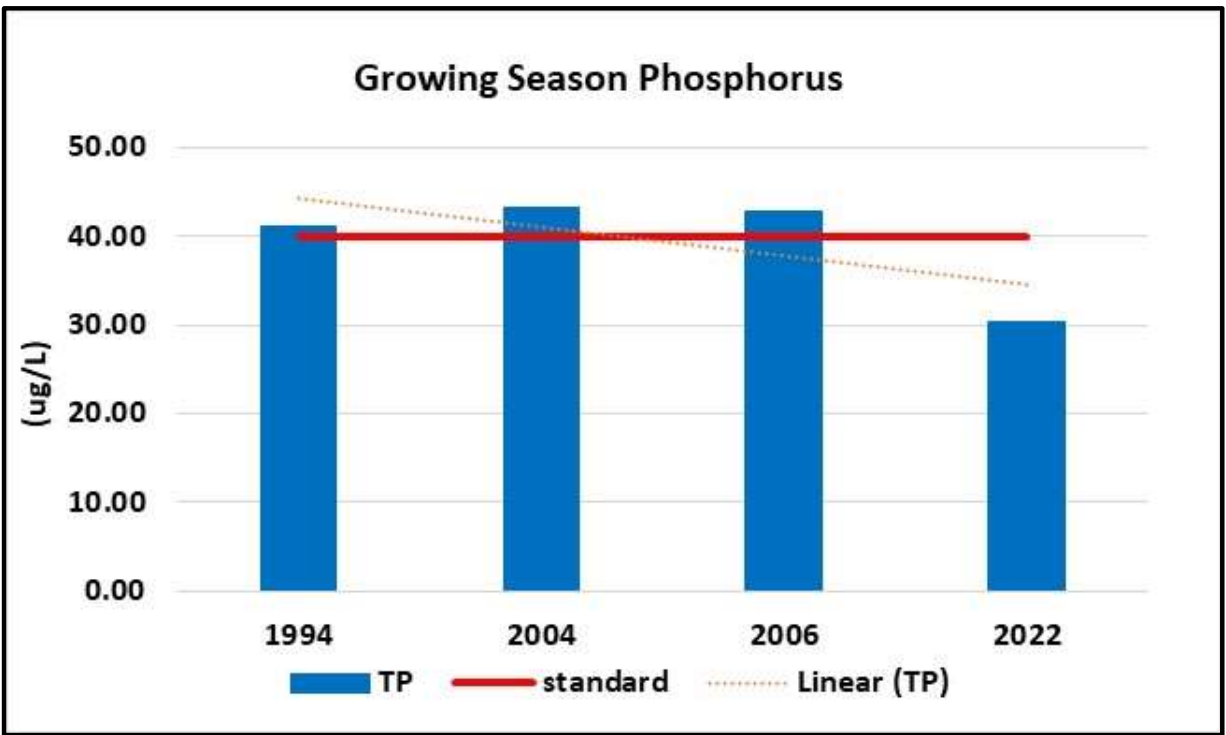
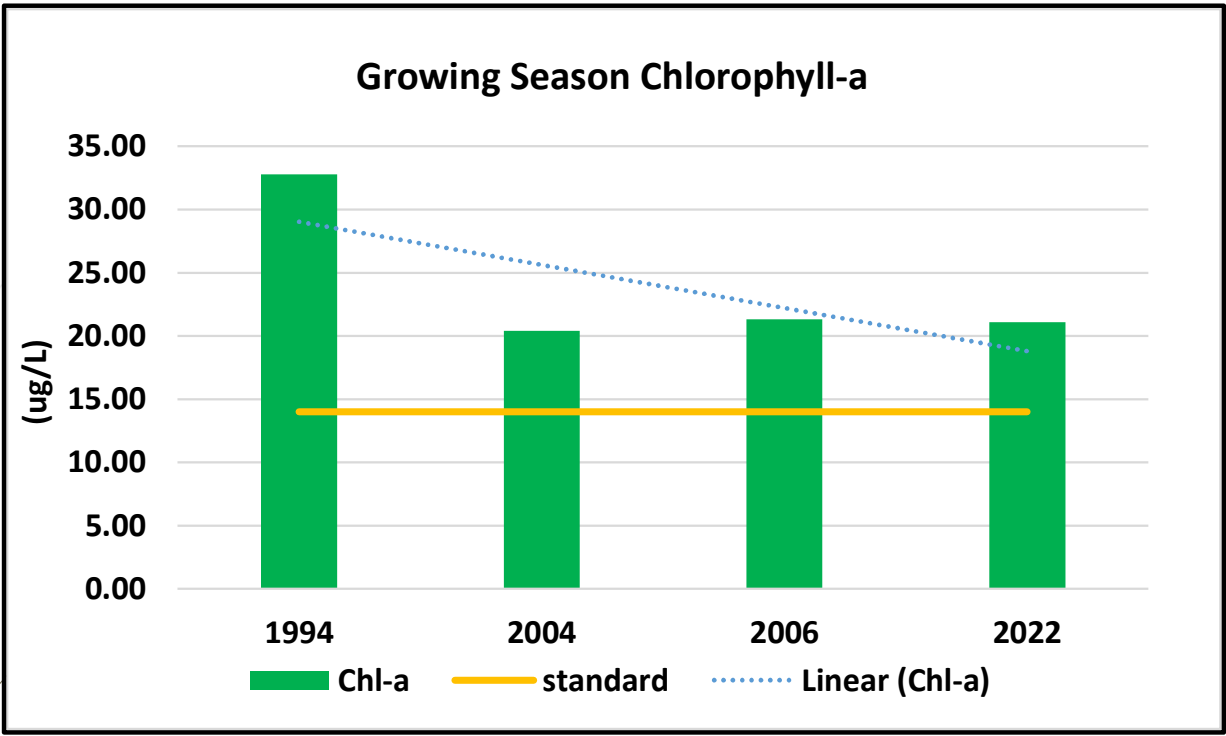
# Water Quality Data

- Transparency data recorded since 1988
- 2022 Lake Monitoring: Phosphorus, Chlorophyll-a and Transparency 2x a Month
- 2022 Stream Monitoring: Phosphorus, sediment and transparency 8 times a growing season.
- 2023 Repeat

**BIG THANKS TO LID Volunteers!!**

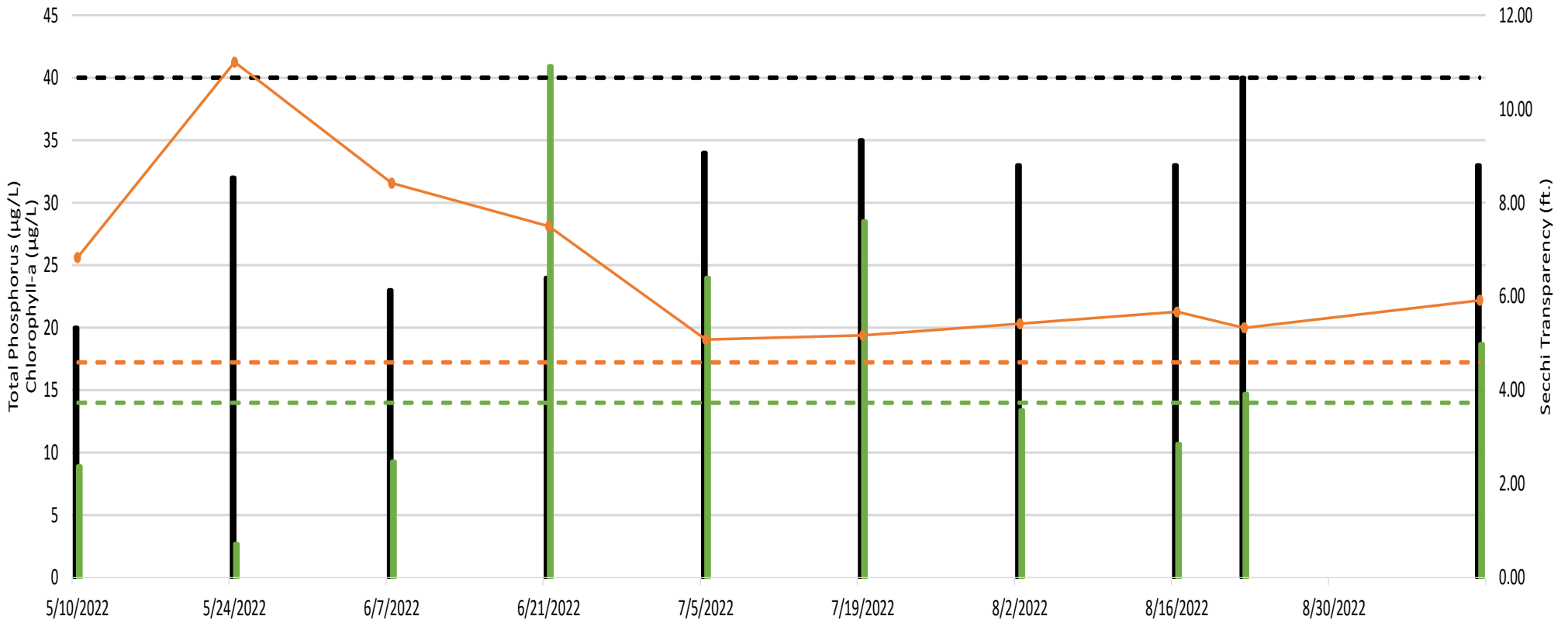
## Growing Season Transparency





2022

Total Phosphorus (µg/L) Chlorophyll-A (µg/L) Secchi Transparency (ft)





# Skogman Lake Shoreline Data

- 6.1 miles of shoreline.
- Plenty of RipRap (rock along shoreline)
- Manicured turf grass.
- Slope.
- Residential development.
- Shoreline erosion
- Runoff concerns
- An estimated 3,467 linear feet were identified as potential restoration locations.





Identifying Resource Concerns:

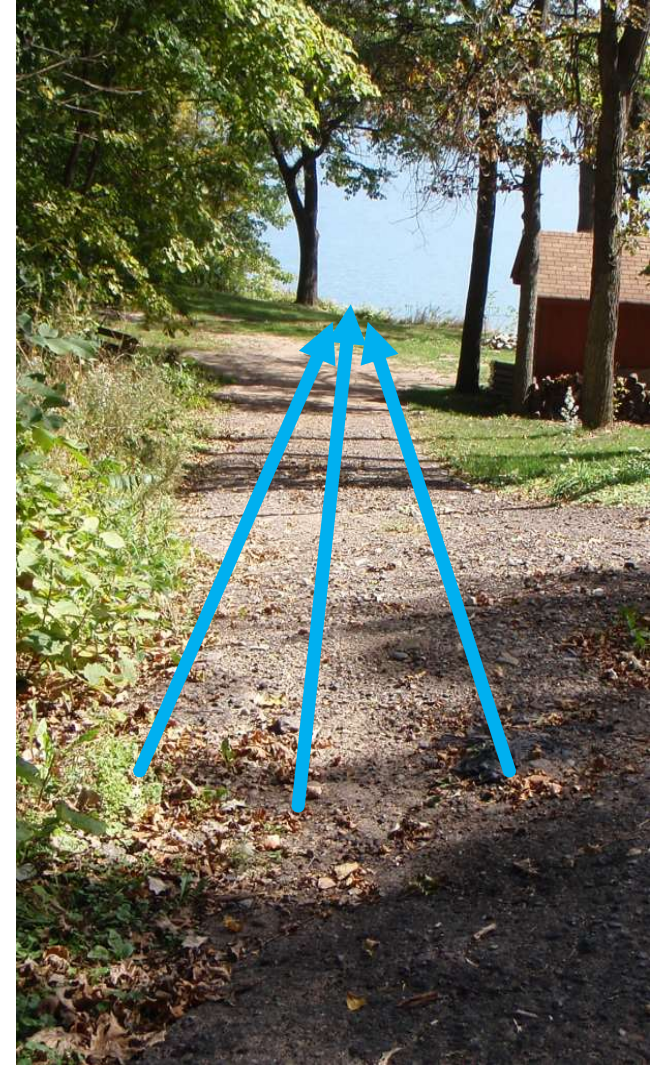
### **Impervious surface**

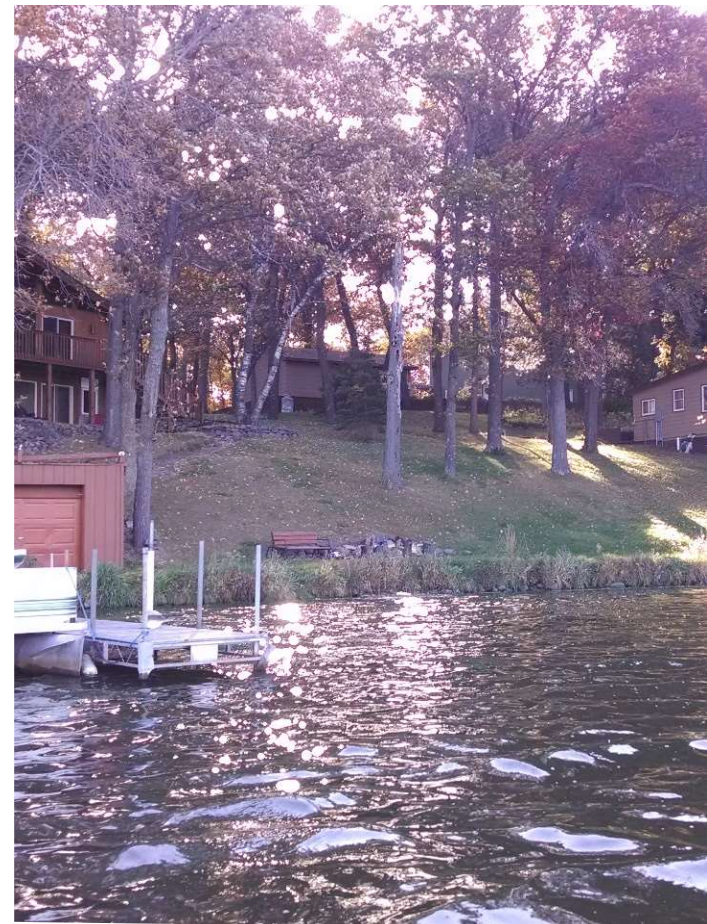
- Driveways
- Roofs
- Patios
- Walkways



Shoreline Buffer Restoration

# Stormwater Runoff





## Identifying Resource Concerns

### **Slope to the lake:**

- Moderate Slope
- Steep Slope
- Manicured Lawn



Identifying Resource Concerns:

**HILL EROSION:**

- Gullies
- Bare soil

## Identifying Resource Concerns:

### Shoreline Erosion:

- Vertical banks
- Bare soil
- Maintained lawn
- Undercutting



## Solutions to the Issue

### Complex Shoreline Restoration:

- Severe erosion
- Difficult site access
- Large drainage area

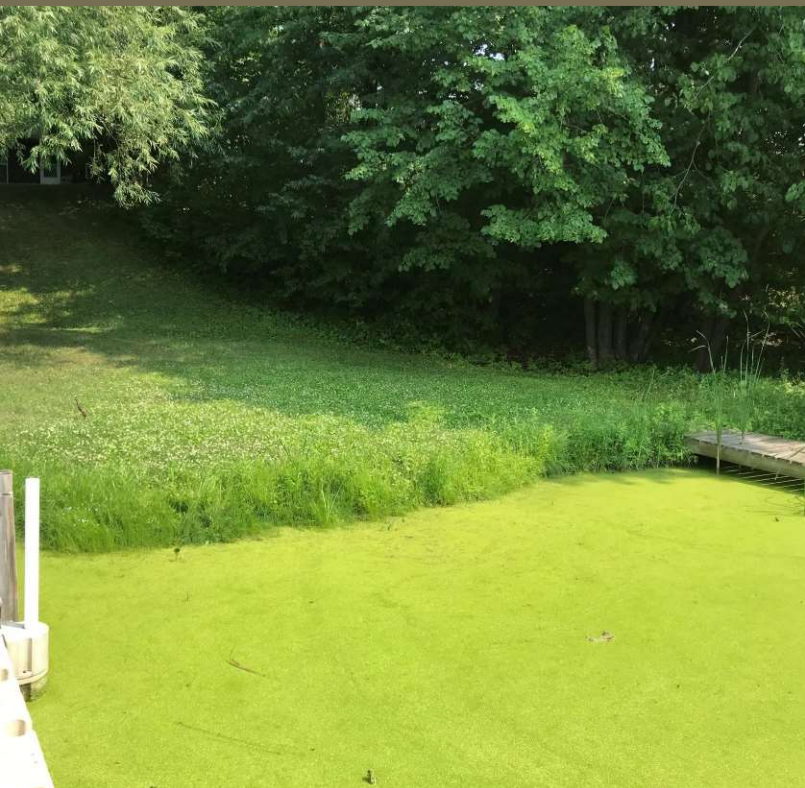


## Solutions to the Issue

- Complex Shoreline Restoration:
- Certified engineered designs
- Surveying
- Permitting
- Heavy equipment contractor







Solutions to the Issue:

**Basic Shoreline Restoration:**

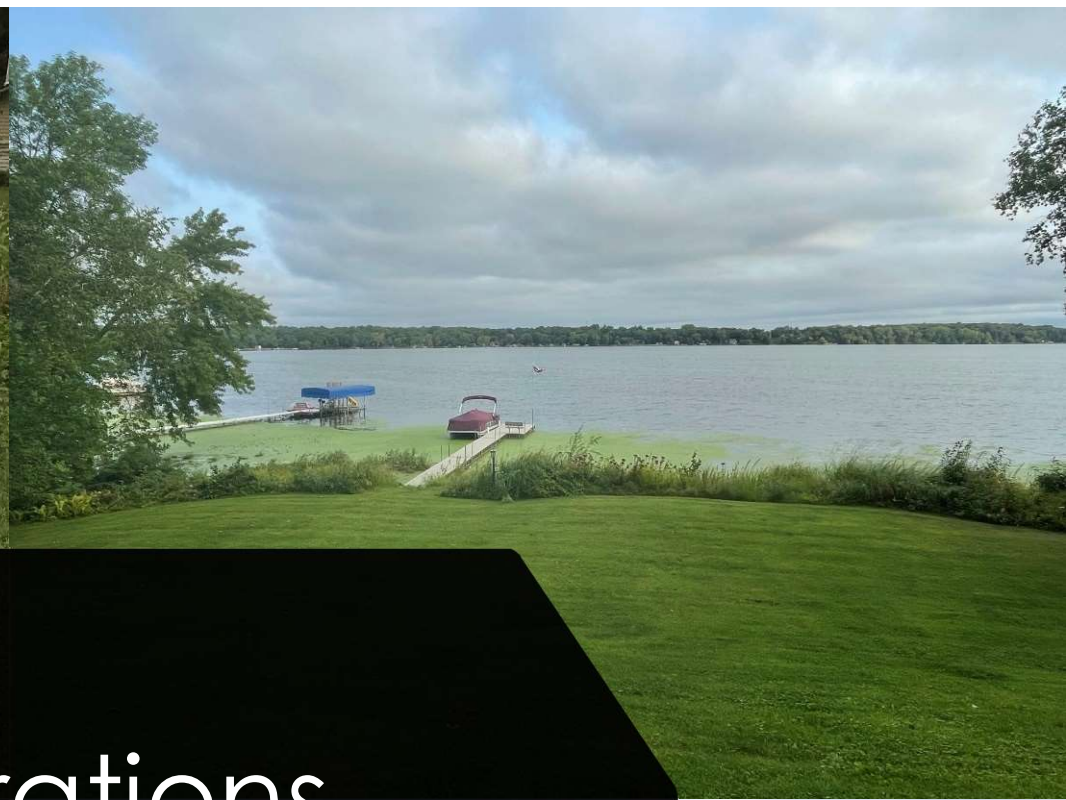
- Mild to medium erosion
- Easy site access
- Small drainage area

# Solutions to the Issue

## Basic Shoreline Restoration

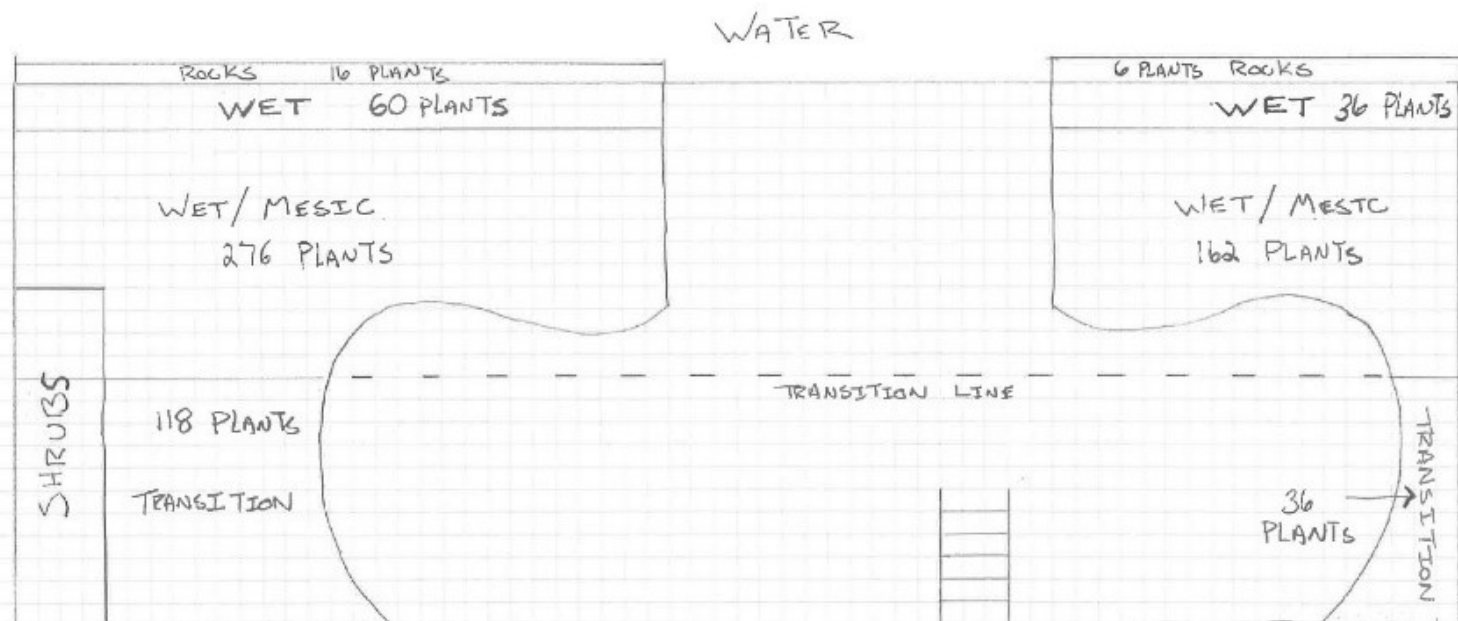
- Basic design: Native Plants, Mulch, blanket, Willow Bundles.
- Assistance from SWCD
- Permitting - Sometimes
- Contractor or DIY





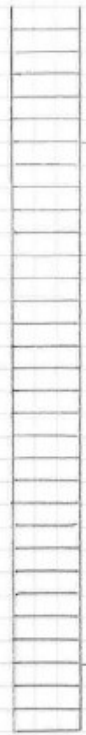
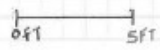
# Shoreline Restorations





710 total plants

Common Name	Abrv.	Quantity	Zones			
			Rocks	Wet	Wet/Mesic	Transition
Yarrow	Y	144			X	X
Prairie Smoke	PR	24				X
Porcupine Sedge	PP	30		X	X	
Butterfly Weed	BW	78			X	X
Blue Flag Iris	BF	54		X	X	
Wild Blue Lupine	WL	38			X	X
Black Eyed Susan	BE	42			X	X
Lake Sedge	LS	42	X	X		
Tussock sedge	TS	30		X		
Side Oats Grama	SO	48				X
Botlabrush sedge	BB	6	X			
Censada anemone	CA	44			X	
Fox sedge	FS	6	X			
Rattlesnake Manna Grass	RM	6	X			
Woolly Sedge	WS	72		X	X	
Hop Sedge	HS	30		X	X	
Tufted Lovegrass	TL	18			X	X
Snowberry	SB	2				X
Bush Honeysuckle	BH	2			X	X





## Plant Material List

Landowner:

Address:

Phone:

Next >

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< Back

Project Name:	Wilke	Total Plants:	348	Est Planting Date:	TBD	Subtotal:		Bloom Time and Color							
Project Contact:	Todd Kulaf	Total Containers:	58					March	April	May	June	July	August	September	October
Scientific Name	Common Name	Plant Type	Soil Type	Sun Exposit	Height	Size (#/tra)	# of plants requested								
<i>Aquilegia canadensis</i>	Columbine	Forbs	M,D	F,S	1-3'	plug	18								
<i>Asclepias incarnata</i>	Swamp Milkweed	Forbs	W,M	F	3-4'	plug	24								
<i>Asclepias tuberosa</i>	Butterfly Weed	Forbs	M,D	F,P	1.5-2'	plug	18								
<i>Carex pellita</i>	Woolly Sedge	Sedges	W,M	F,P	1.5-2'	plug	66								
<i>Carex sprengelii</i>	Long Beaked Sedge	Sedges	W-D	P,S	1-2'	plug	66								
<i>Carex vulpinoidea</i>	Brown Fox Sedge	Sedges	W,M	F,P	3'	plug	66								
<i>Eupatorium maculatum</i>	Joe Pye Weed	Forbs	W,M	F	4-6'	plug	18								
<i>Eupatorium perfoliatum</i>	Boneset	Forbs	W,M	F,P	3-4'	plug	18								
<i>Iris versicolor</i>	Blue Flag Iris	Forbs	W,M	F,P	2-3'	plug	18								
<i>Folemonium reptans</i>	Jacob's Ladder	Forbs	W-D	F,P,S	1'	plug	18								
<i>Zizia aurea</i>	Golden Alexanders	Forbs	W-D	F,P	3'	plug	18								



Boneset



Blue Flag Iris



Golden Alexanders



Long Beaked Sedge



swamp Milkweed



jacob's Ladder



Joe Pye Weed



Butterfly Weed



Jacobs Ladder



Fox sedge

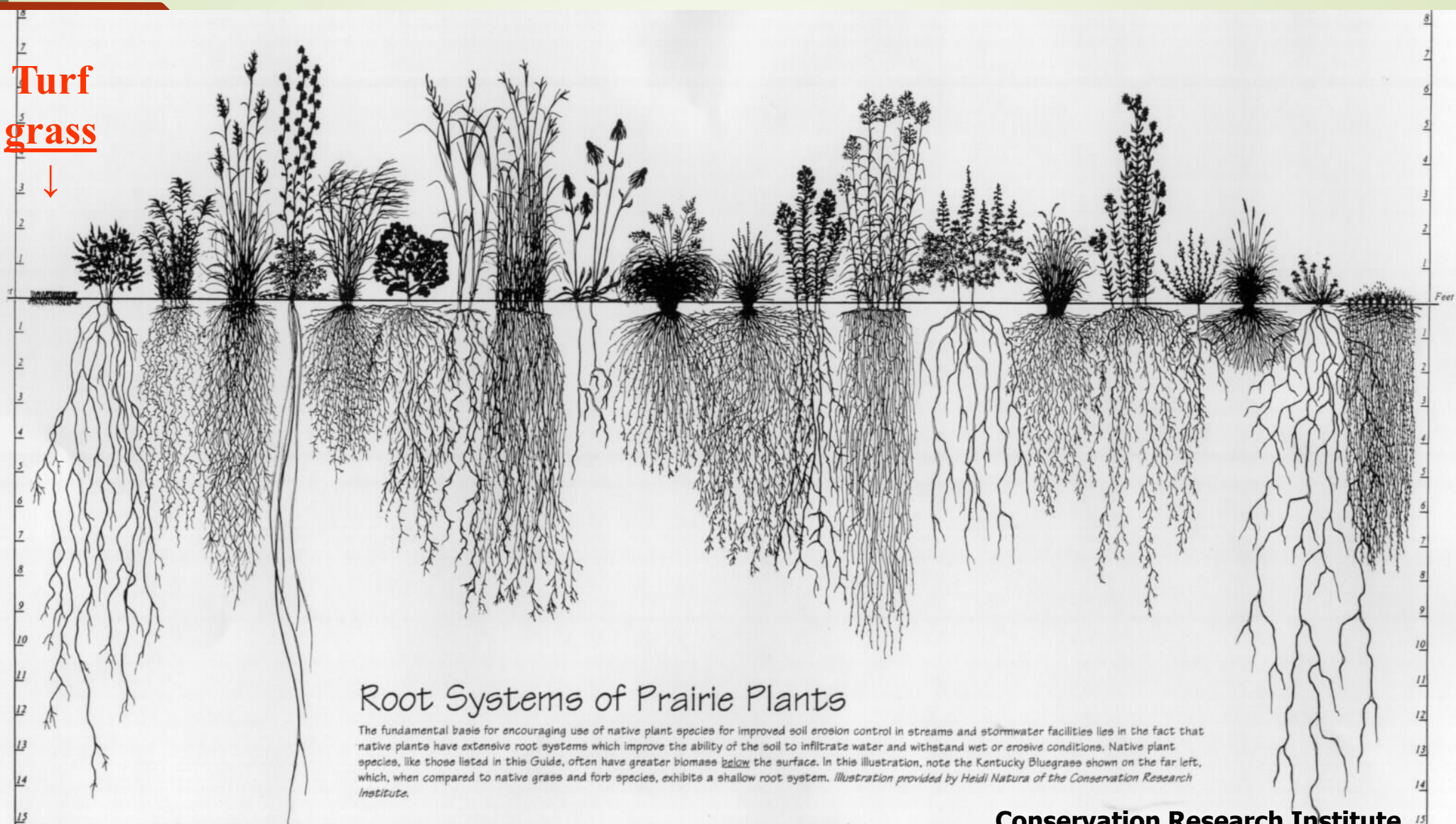


Woolly Sedge



Columbine

**Turf  
grass**



### Root Systems of Prairie Plants

The fundamental basis for encouraging use of native plant species for improved soil erosion control in streams and stormwater facilities lies in the fact that native plants have extensive root systems which improve the ability of the soil to infiltrate water and withstand wet or erosive conditions. Native plant species, like those listed in this Guide, often have greater biomass below the surface. In this illustration, note the Kentucky Bluegrass shown on the far left, which, when compared to native grass and forb species, exhibits a shallow root system. Illustration provided by Heidi Natura of the Conservation Research Institute.

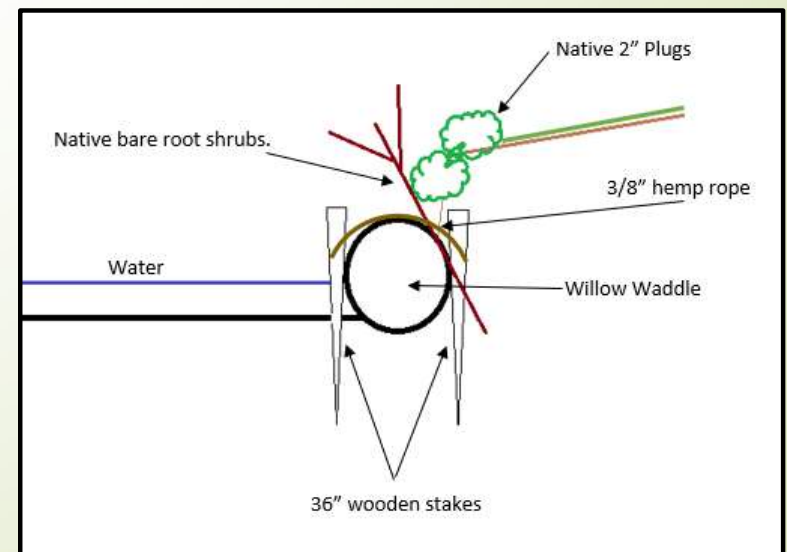
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|---|--|---|---|---|---|---------------------------------------|---|---|--|---|---|--|---|--|---|---|--|--|--|---|
| Kentucky Blue Grass<br><i>Poa pratensis</i> | Lead Plant<br><i>Amorpha canescens</i> | Missouri Goldenrod<br><i>Solidago missouriensis</i> | Indian Grass<br><i>Sorghastrum nutans</i> | Compass Plant<br><i>Silphium laciniatum</i> | Porcupine Grass<br><i>Stipa spartea</i> | Heath Aster<br><i>Aster ericoides</i> | Prairie Cord Grass<br><i>Spartina pectinata</i> | Big Blue Stem<br><i>Andropogon gerardii</i> | Pale Purple Coneflower<br><i>Echinacea pallida</i> | Prairie Dropseed<br><i>Sporobolus heterolepis</i> | Side Oats Gramma<br><i>Bouteloua curtipendula</i> | False Boneset<br><i>Kuhnia eupatorioides</i> | Switch Grass<br><i>Panicum virgatum</i> | White Wild Indigo<br><i>Baptisia leucantha</i> | Little Blue Stem<br><i>Andropogon scoparius</i> | Rosin Weed<br><i>Silphium perfoliatum</i> | Purple Prairie Clover<br><i>Petalostemum purpureum</i> | Juncus Grass<br><i>Koeleria cristata</i> | Cylindric Blazing Star<br><i>Liatris cylindracea</i> | Buffalo Grass<br><i>Buchloe dactyloides</i> |
|---|--|---|---|---|---|---------------------------------------|---|---|--|---|---|--|---|--|---|---|--|--|--|---|

**Conservation Research Institute**

# Deep-rooted Native Plants



# Willow Bundles







# Monarchs and Pollinators







# Gustafson Residence

Lake Johanna – Ramsey County



2005 5 27

# Gustafson Residence

Lake Johanna – Ramsey County



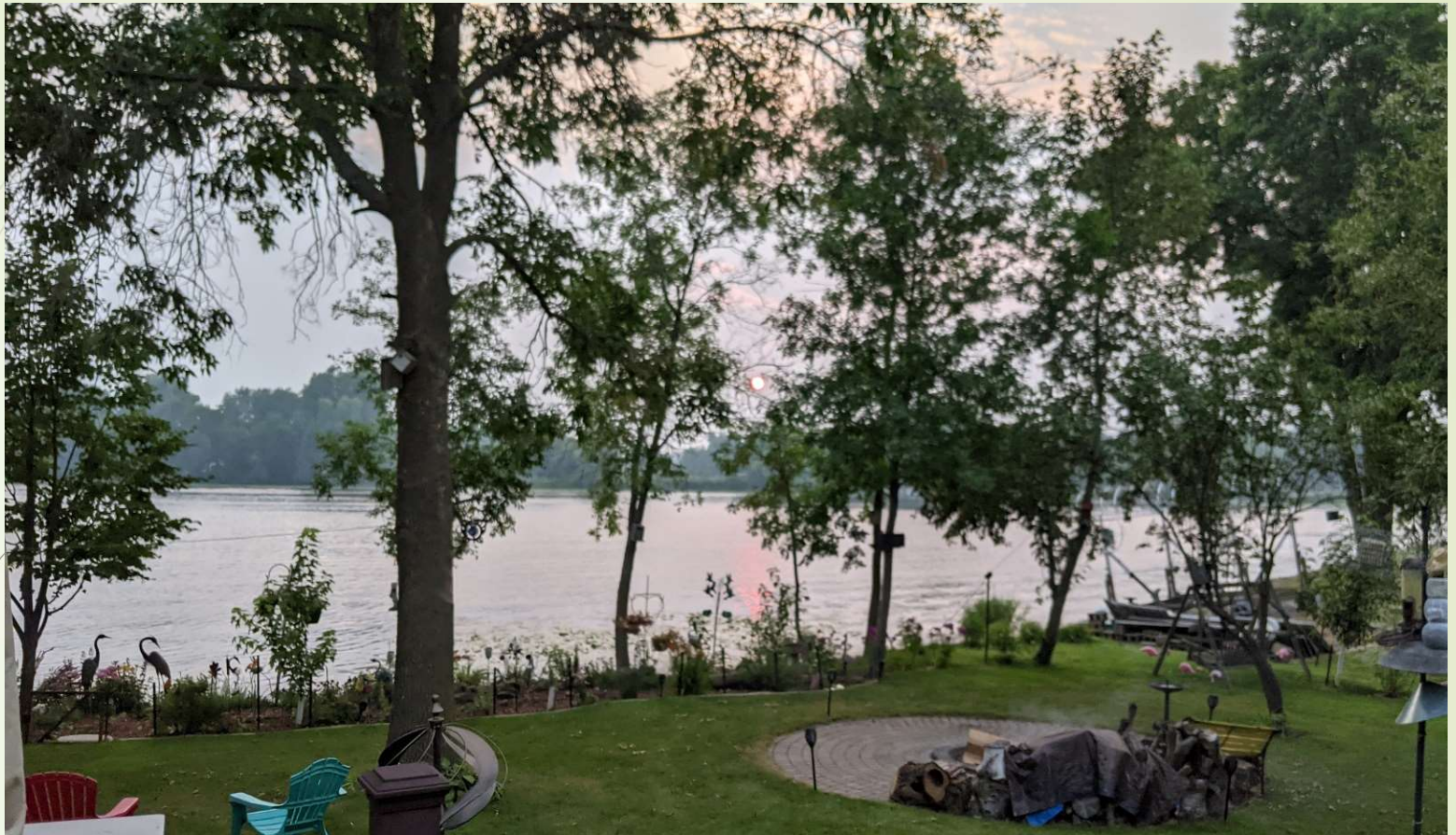
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# Shoreline Restoration



# Shoreline Restoration



# Shoreline Restoration





# Rain Garden

# Next Steps!

- Call the SWCD!
- Identify potential issues
- Brain storm ideas
- Research plants
- Talk with neighbors
- Draw plan
- Get to work!

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