

Planting for Clean Water: Wonderful Wetlands

Hugo



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Wonderful Wetlands:

1. Wetlands 101
2. What makes wetlands special?
3. Improving your wetland habitat
4. Creating a beautiful wetland yard



Wetlands 101:

1. What is a wetland?
2. Types of wetlands
3. Wetland rules



What is a wetland?

Hydric soils – soils showing evidence of prolonged saturation. Typically Organic or Mineral soils.

Hydrophytic vegetation – plants adapted to wet conditions (Example: Bulrush, cattail, skunk cabbage)

Saturation or inundation – wet above ground or within 12 inches of the ground surface during all or part of the growing season

Organic Soils



Organic soils develop in depressions and consist of plant remains that do not decompose because soil is saturated. Organic soils can range in thickness from 2 to 30 feet. Plant parts are often still visible in many organic (peat) soils.

Mineral Soils

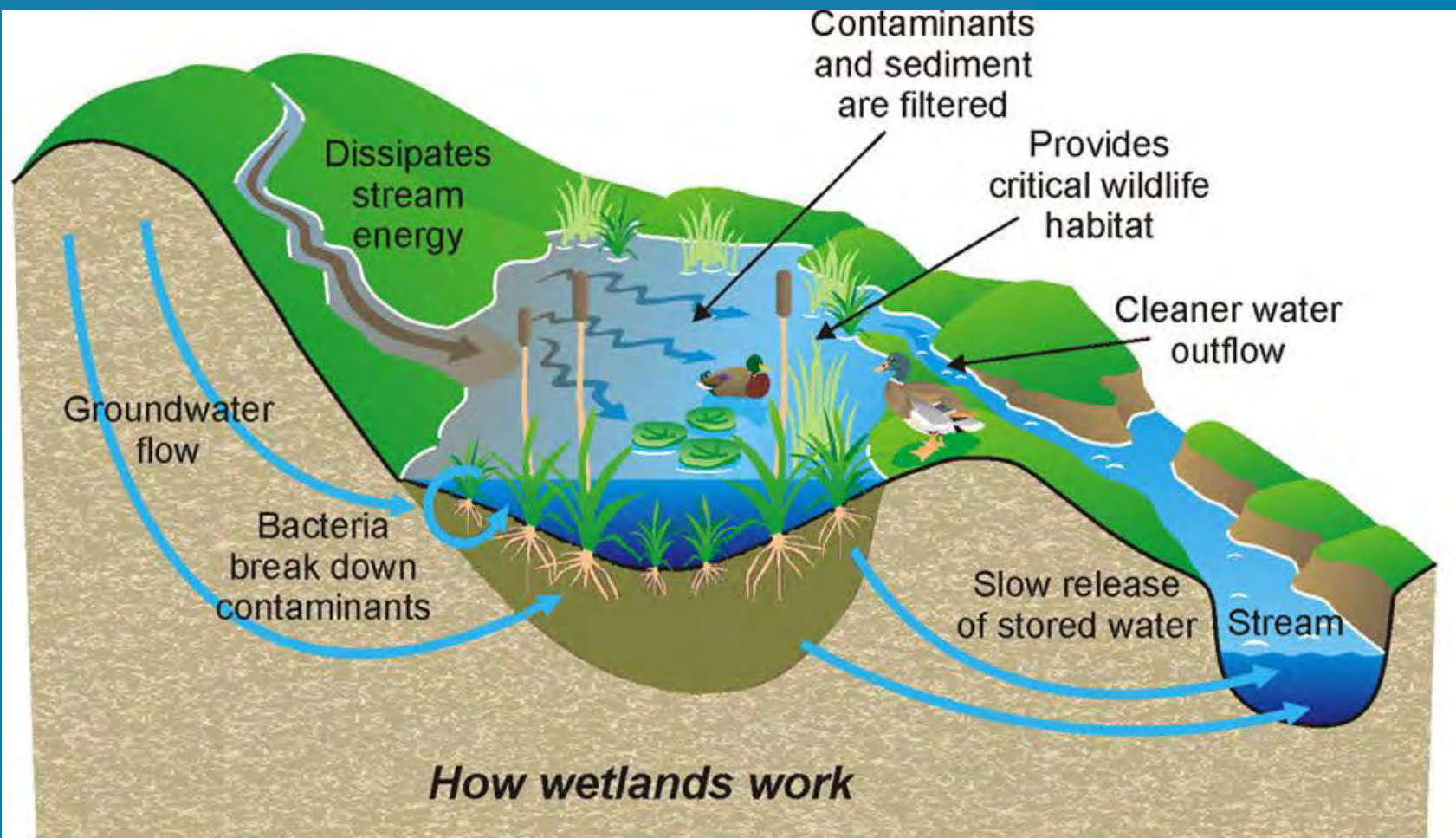


Mineral soils that are saturated much of the time become dull-colored or gleyed. Gleyed soils are neutral gray and occasionally greenish or bluish gray. Mineral soils saturated for short periods develop spots or blotches of different colors called mottles.





Hydrology Sources





Wetland Types:

Circular 39 Classification

Established by the U.S Fish and Wildlife Service in 1956

Uses Depth, duration of water, and variety of vegetation

- Type 1 – Seasonally Flood (Vernal Pools)
- Type 2 – Wet Meadow, Sedge Meadow
- Type 3 – Shallow marsh
- Type 4 – Deep Marsh
- Type 5 – Shallow Open Water
- Type 6 – Shrub Swamp, Shrub Carr
- Type 7 – Wooded Swamp
- Type 8 – Bogs (mossy layer, acid chemistry)

Decoding Wetlands

- Circular 39: Type 5, Deep Marsh
- Cowardin (National Wetland Inventory): PEMF
 - P = Palustrine (shallow pond, marsh, swamp)
 - EM = Emergent vegetation
 - F = Semi Permanently Flooded (hydrology modifier)



In short, leave the codes to the experts! They can be an excellent starting place, but does not substitute for an official wetland delineation.

Type 1: Seasonally Flooded



Type 1: Vernal pool



Type 2: Sedge Meadow



Type 4: Deep Marsh



Type 6: Shrub swamp



Type 8: Bogs



Resources & Tools

- [DNR Wetland Finder Tool](#)
- [USDA Web Soil Survey](#)
- [National Wetlands Inventory](#)
- [BWSR Minnesota Wetland Restoration Guide](#)
 - Plant ID Guide
 - Site Assessment & Evaluation
 - Vegetation Establishment
 - Site Management & Monitoring

Rules of the (wet)Land

NO = 1)Draining 2) Filling 3) Altering

- Protected by the Minnesota Wetland Conservation Act (WCA) 1991
- Not all wetlands hold water throughout the year. Seasonal wetlands are still protected.
- Some cities & watershed districts require un-mowed buffers around wetlands.
- You are required to get a permit for all projects that impact wetlands, including driveways, culverts, new construction and home additions.
- Contact your SWCD for questions related to wetlands.

Can I Alter My Wetland?

Q. Can I fill in the low spot in my back yard?

A. If it meets the scientific criteria as a wetland, you will need a permit under the Minnesota Wetland Conservation Act, and potentially from the Corps of Engineers and local watershed district.

Q. Can I dig out a pond within my wetland?

A. Excavations within wetlands are an alteration, *but not necessarily an improvement*. Excavations may be permissible if the functional value of the altered wetland is higher than the pre-existing condition. A permit will be needed.



Can I get rid of the weeds and replace it with more attractive vegetation?

- First clarify if it is in fact a weed! Some native plants appear messy or uncontrolled, but provide wonderful habitat and water quality benefits.
- Replacing aggressive invasive species like reed canary grass or purple loosestrife with a diverse mix of grasses, sedges, and wildflowers can drastically improve wildlife habitat.
- Always check with your community (watershed, HOA, or city) to see what regulations they have regarding clearing vegetation around wetlands.



What makes wetlands special?

1. Benefits for flood prevention and water quality
2. Unique plants and animals















Chorus frog, peeper and toad photos from MN DNR



Improving your wetland habitat:

1. Identifying and managing common invasive species
2. Protecting your wetland from runoff pollution

Common Invasive Wetland Species

Reed Canarygrass



Purple Loosestrife



Non Native Phragmites



Inflorescences on Previous Year's Stems



Native

Inflorescence thin and few branched

Non-native

Inflorescence full and much branched



40.5 million acres of lawn in the U.S.

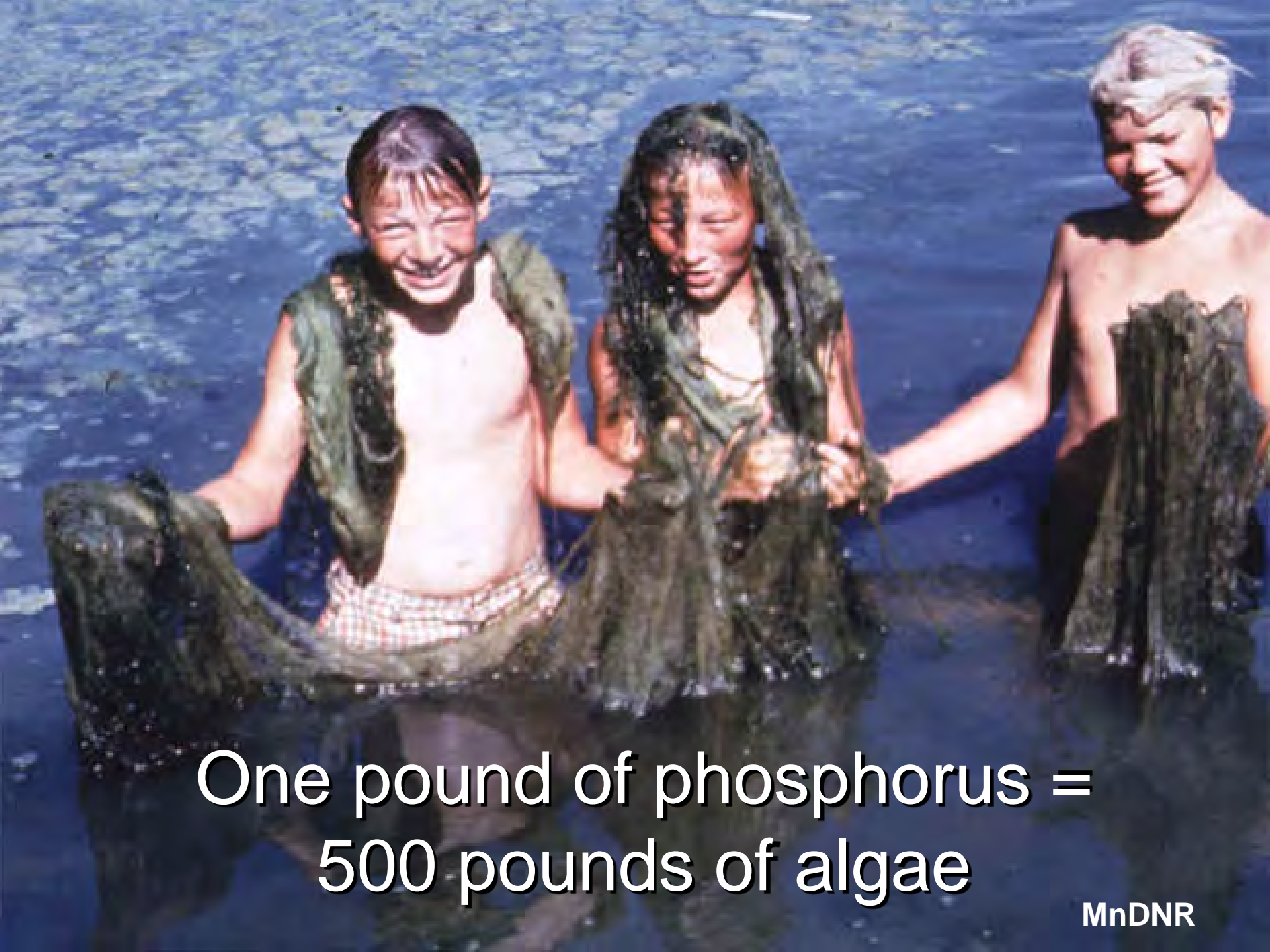
32 million acres is irrigated

****More irrigated lawn than irrigated corn**

Lawns use:

- 9 billion gallons of water per day
- 3 million tons of fertilizer per year
- 30,000 tons of pesticides per year
- 800 million gallons of gasoline per year

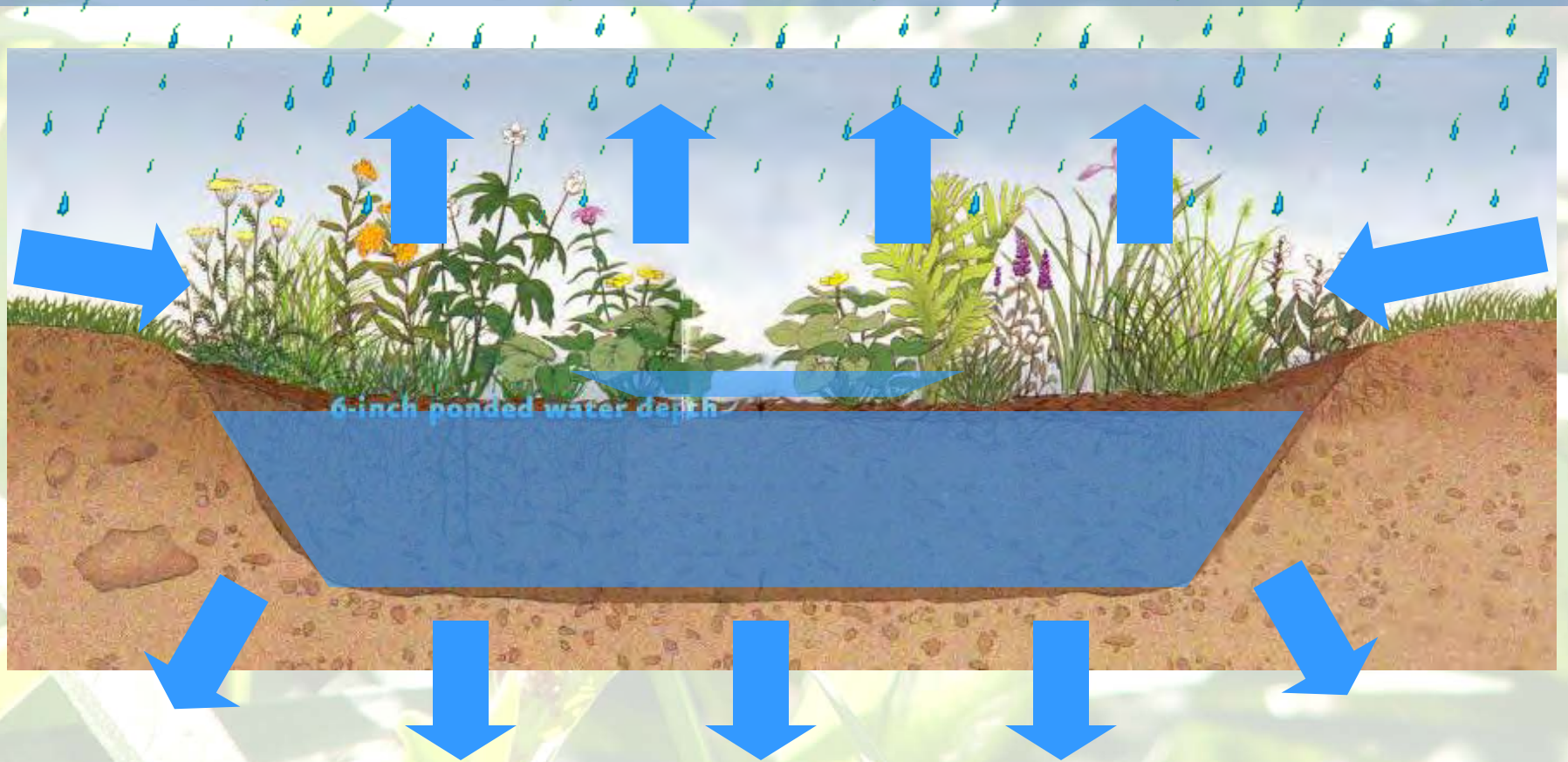
****17 million gallons of gas spilt each year refilling lawn mowers**



One pound of phosphorus =
500 pounds of algae

Raingardens

(Capturing Rainwater / Stormwater)

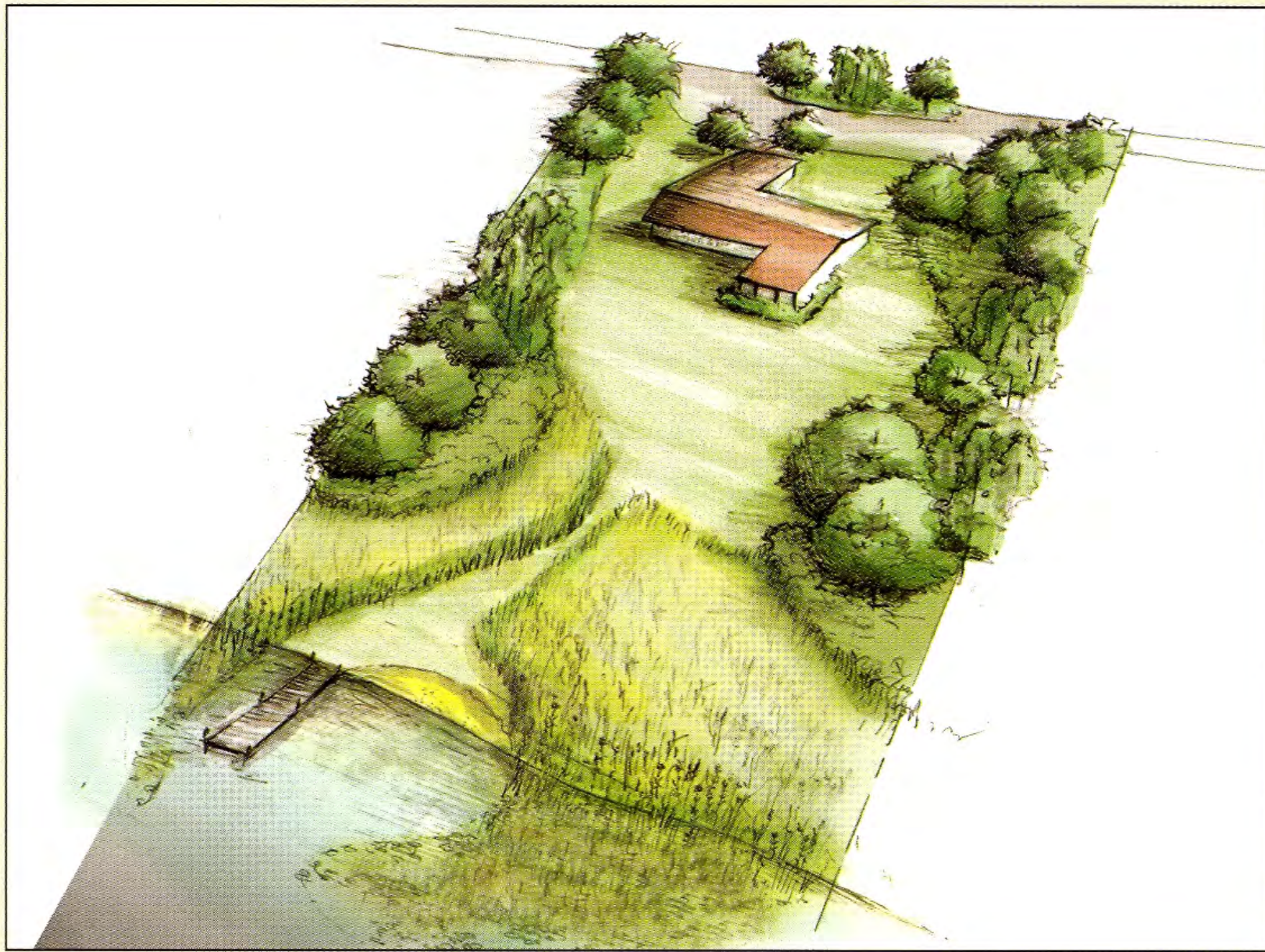


Just like a regular planting, but able to
absorb rainwater and breakdown pollutants



Raingarden
Soaks in Runoff
Captures Pollutants
Protects Streams, Wetlands and Lakes
Lake Elmo
City of Elmo
www.cityofelmo.com

Raingarden in Lake Elmo



Roxanna Esparza



Creating a beautiful wetland yard:

1. Choosing the right plants
2. Case studies

Planting in Wetlands - technical

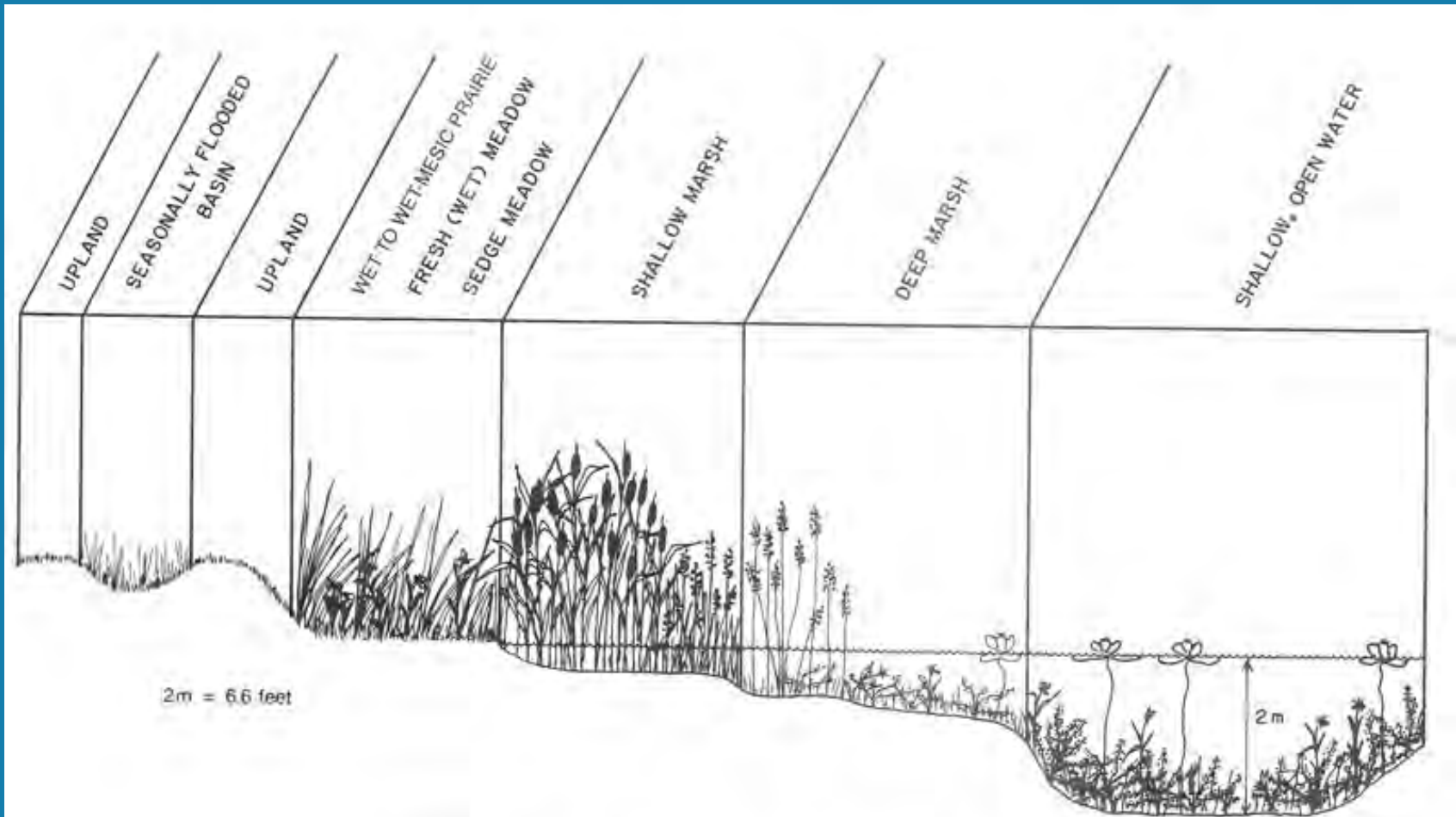


FIGURE 5 — GENERALIZED CROSS SECTION OF A
MEADOW-MARSH-OPEN WATER COMPLEX





6-36" normal water level



Pickerel weed



White water lily

0-6" normal water level

Glyceria species
(Manna grasses)



Jewelweed

0-3" normal water level



Joe-pye and turtlehead



Blue flag iris

What's that plant?



Stem and Leaf Cross Sections



Cattail Leaf
(*Typha*)



Bur-Reed Leaf
(*Sparganium*)



Iris Leaf
(*Iris*)



Sweet Flag Leaf
(*Acorus*)



Sedge Stem
(*Carex*, *Scirpus*, *Schoenoplectus*)



Bulrush or Spike-Rush Stem
(*Schoenoplectus*, *Eleocharis*)



Grass Stem
(*Gramineae*)



Sedges



Sedge as edge community



Sedge meadow

More sedges



Lake sedge



Wire sedge,
cotton grass



Mixed sedges, alder,
red-osier dogwood

Sedges



Wetland Forbs



Blue Flag Iris



Jack-in-the-Pulpit



Jewelweed



Marsh Milkweed



Blue Vervain



Bottle Gentian

Wetland Shrubs



Speckled Alder



Winterberry



Pussy Willow



Steeplebush



Elderberry



Red Osier Dogwood

Wetland Grasses & Rushes



Cattails

Broadleaf Cattail – NATIVE

Typha latifolia

Narrowleaf Cattail - INVASIVE

Typha angustifolia

**Creates dense stands and can hybridize with the native cattail.*

Successful management methods include “Cut & Flood”

Key to remember:

Corndogs are better than hotdogs!





Need plants?

Master Gardener Plant Sales

- Chisago – order now and pick up on May 10-11
- Washington – May 19 | 11am-3pm:
 - Washington County Fairgrounds

Landscape Revival Native Plant Expo and Market

- June 1 | 9am-1pm – Shoreview
 - Shepherd of the Hills, 3920 Victoria St N
- June 8 | 9am-1pm – Oakdale City Hall

And many local native nurseries! Visit your local Wild Ones chapter website for more information.

MINNESOTA & WESTERN WISCONSIN NATIVE PLANT NURSERIES



SYMBOLS d: Design Services i: Installation Services m: Maintenance Services

1 Blazing Star Gardens

Phone: 507-402-8337
Email: blazingstargardens@gmail.com
Web: www.blazingstargardens.com

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2 Boreal Natives

3943 Munger Shaw Road, Cloquet, MN 55720
Phone: 218-729-7001
Email: borealnatives@prairieresto.com
Web: prairieresto.com/boreal_natives.shtml

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3 Sogn Valley Farm

Phone: 763-614-8853
Email: dana@sognvalleyfarm.com
Web: www.sognvalleyfarm.com

Purchase at events & St. Paul Farmers' Market

4 Ecoscapes Sustainable Landscaping

Phone: 612-965-0848
Email: info@ecoscapes1.com
Web: www.ecoscapes1.com

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5 Glacial Ridge Growers

Phone: 320-634-0136
Email: glacridgegrowers@aol.com
Web: www.glacialridgegrowers.com
 St. Paul Farmers' Market on Saturdays

6 Shoreview Natives

1185 Shoreview Rd, Two Harbors, MN 55616
Phone: 218-341-5286
Email: shoreviewnatives@gmail.com
Web: www.shoreviewnatives.com

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7 Landscape Alternatives

25316 St. Croix Trail, Shafer, MN 55074
Phone: 651-257-4460
Email: landscapealt@frontiernet.net
Web: www.landscapealternatives.com

8 MN Native Landscapes

8740 77th St NE, Otsego, MN 55362
Phone: 763-295-0010
Email: bre@mnlcorp.com
Web: www.mnnativelandscapes.com

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9 Morning Sky Greenery

44804 East Highway 28, Morris, MN 56267
Phone: 320-795-6234
Email: info@morningskygreenery.com
Web: www.morningskygreenery.com

10 Natural Shore Technologies

1480 Cty Rd 90, Maple Plain, MN (new location)
Phone: 612-703-7581
Email: Rob.l@naturalshore.com
Web: www.naturalshore.com

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11 Naturally Wild

Phone: 612-922-9279
Email: info@naturallywildflowers.com
Web: www.naturallywildflowers.com
 Purchase at website-listed events.

12 Out Back Nursery

15280 110th St S, Hastings, MN 55033
Phone: 651-438-2771
Email: sales@outbacknursery.com
Web: www.outbacknursery.com

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13 Bluprairie Native Plant Nursery

12975 32nd St, Watertown, MN 55388
Phone: 612-720-7941
Email: jdanie@bluprairie.com
Web: www.bluprairie.com

14 Prairie Moon Nursery

32115 Prairie Lane, Winona, MN 55987
Phone: 866-417-8156
Email: info@prairiemoon.com
Web: www.prairiemoon.com

Purchase online

15 Prairie Restorations Inc

31646 128th St NW, Princeton, MN 55371
 21120 Ozark Court North, Scandia, MN 55012
Phone: 800-837-5986
Email: info@prairieresto.com
Web: www.prairieresto.com

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16 Native Sun Seeds and Plants

St. Croix Valley, MN
Phone: 651-318-8667
Email: nativesunseedsandplants@gmail.com
Web: www.nativesunseedsandplants.com

Purchase online or at website-listed events.

17 Shooting Star Native Seeds

20740 Cty Rd 33, Spring Grove, MN 55974
Phone: 888-983-3670
Email: info@ssns.co
Web: www.shootingstarnativeseed.com

18 Sunshine Gardens Nursery and Landscaping

1286 Shadywood Shores Dr NW
 Pine River, MN 56474
Phone: 218-947-3154
Email: sgardens@uslink.net
Web: www.sunshinegardens.tripod.com

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19 Dragonfly Gardens

491 State Highway 46 Amery, WI
Phone: 715 268-7660
Email: info@dragonflygardens.net
Web: www.dragonflygardens.net

20 Lupine Gardens

880 155th St, Amery, WI 54001
Phone: 715-222-6669
Email: lupinegardens@yahoo.com
Web: www.lupinegardens.com

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21 Kinnickinnic Natives

235 State Road 65, River Falls, WI 54022
Phone: 715 425 7605 or 715 222 6910
Email: whuhnke@dishup.us
Web: www.kinninnatives.com

22 Learning Pine Natives

3130 S Camp Amnicon Rd, South Range, WI
Phone: 715-398-5453
Email: phlina@gmail.com

Call for appointment.




Getting started:

1. WCA Site Visits/Wetland Delineations
2. WCD Site Visits
3. Watershed District cost-share grants

Watershed Management Organizations Anoka County

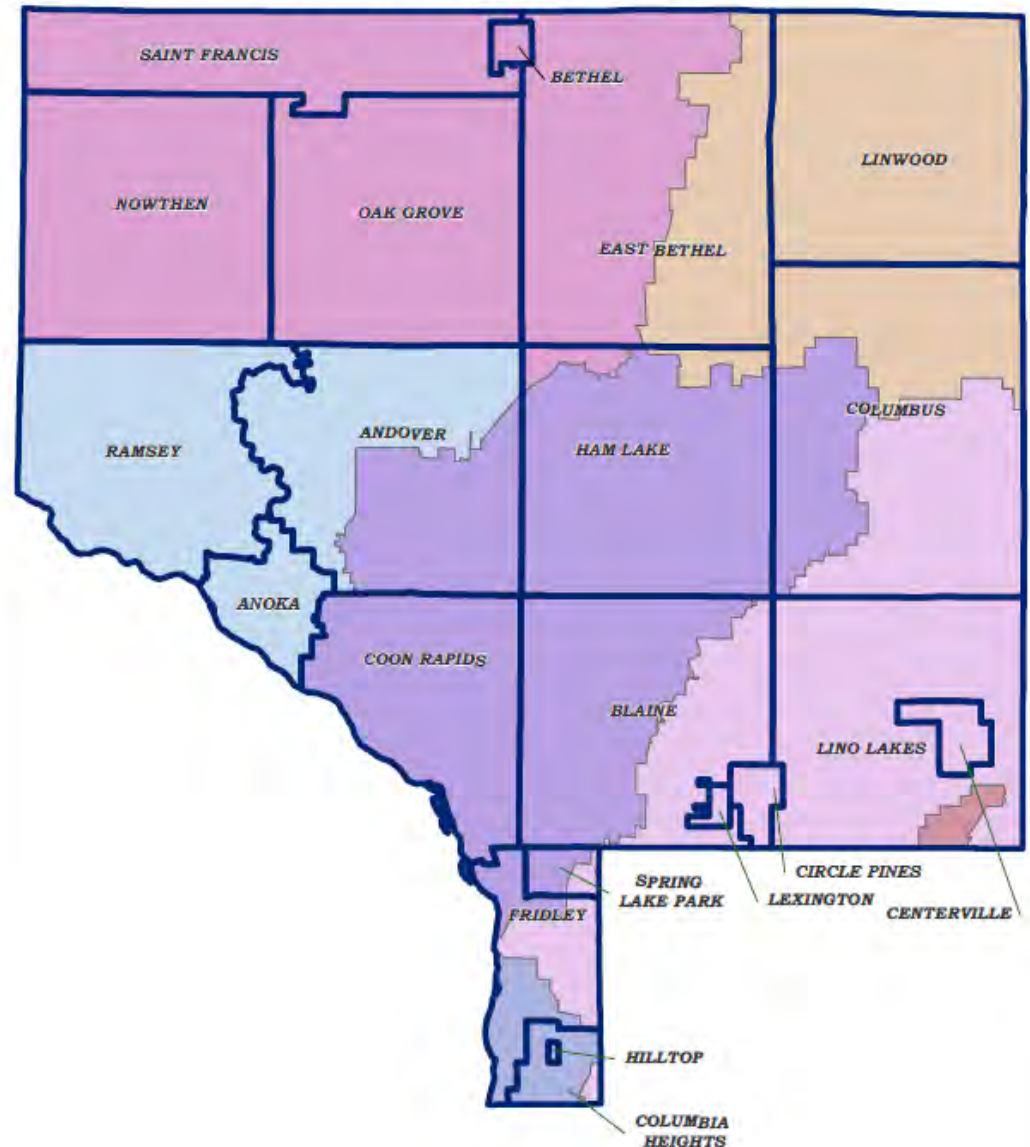
Legend

 City Boundary

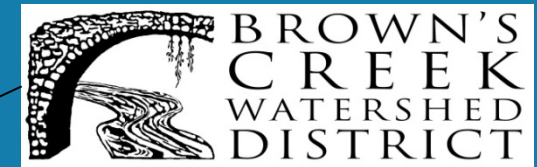
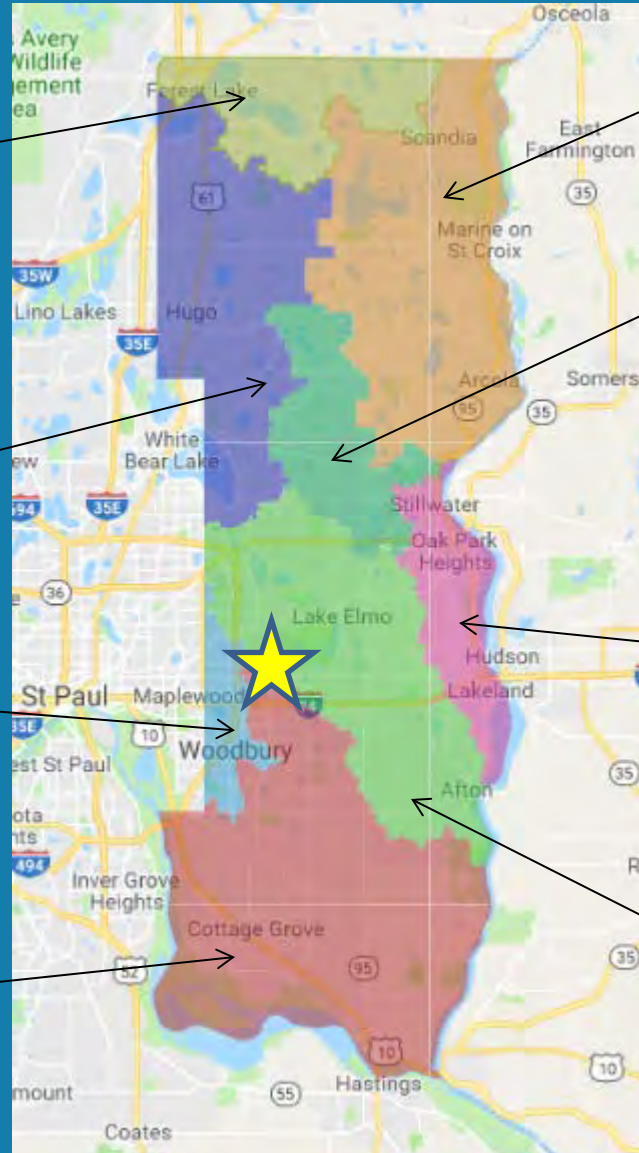
Watershed Districts

-  Sunrise River WMO
Phone: 763-367-7840
-  Coon Creek Watershed District
Phone: 763-755-0975
-  Lower Rum River WMO
Phone: 763-767-5131
-  Vadnais Lake Area WMO
Phone: 651-204-6070
-  Rice Creek Watershed District
Phone: 763-398-3070
-  Mississippi WMO
Phone: 612-463-8780
-  Upper Rum River WMO
Phone: Check Website

Watershed Districts



Watershed Management Organizations Washington County





Questions?

Angie Hong – angie.hong@mnwcd.org, 651-330-8220 x.35

Lauren Haydon – lhaydon@mnwcd.org, 651-330-8220 x.24

Beth Carreno – bcarreno@ricecreek.org, 763-398-3073

Anoka SWCD - www.anokaswcd.org

Carrie Taylor - carrie.taylor@anokaswcd.org, 763-434-2030 ext. 19

Washington CD – www.mnwcd.org

Comfort Lake – Forest Lake WD – www.clflwd.org

Tara Kline – tkline@mnwcd.org, 651-330-8220 x.28

Carnelian-Marine-St. Croix WD– www.cmscwg.org

Mike Isensee – misensee@mnwcd.org, 651-330-8220 x.22

Rice Creek Watershed District – www.ricecreek.org

Bryan Pynn – bpynn@mnwcd.org, 651-330-8220 x.36