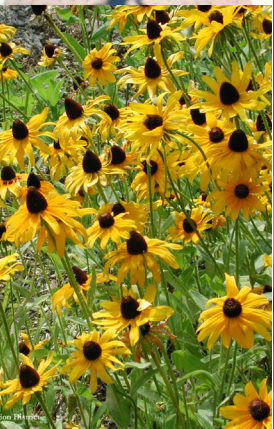




Water Resource Education Toolkit for Congregations

Information & Activity Guide



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Above: Parking lot retrofit and raingardens at First Presbyterian Church of Stillwater. Below: A raingarden at Woodbury Community Church in Woodbury, MN.



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Background

Minnesota is known for its abundance of “sky-blue” waters, from the Mighty Mississippi to the Scenic St. Croix and every lake and creek in-between, we have much to be thankful for here. We also have much to protect.

The quality of water resources in Minnesota is threatened by increasing development and pollution. When it rains, the stormwater that runs off driveways, lawns, houses, roofs and parking lots can carry pollutants such as oil, chemicals, pet waste and yard waste down storm sewers and into nearby lakes, streams and rivers. These pollutants threaten the health of wildlife, impair the quality of our drinking water, and damage the quality of recreational opportunities like swimming and fishing.

Fortunately there are a variety of actions that individuals and congregations can take to reduce stormwater runoff and protect our water resources, such as planting a raingarden or native garden, and educating their members about clean water actions, such as the 10 Simple Steps to Protect Water Resources.

Below: A raingarden at All Saints Lutheran Church in Cottage Grove, MN.



Photo by Washington Conservation District

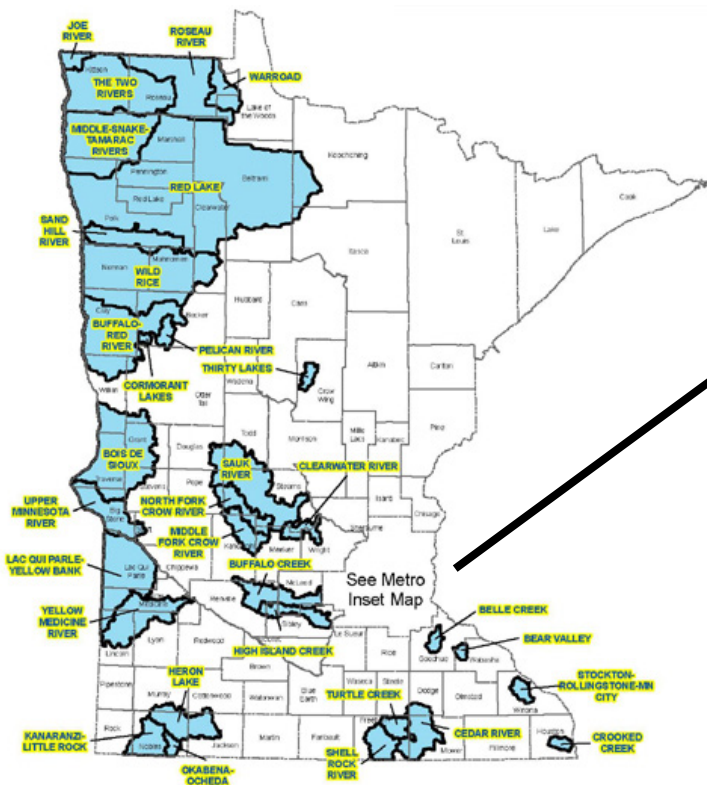
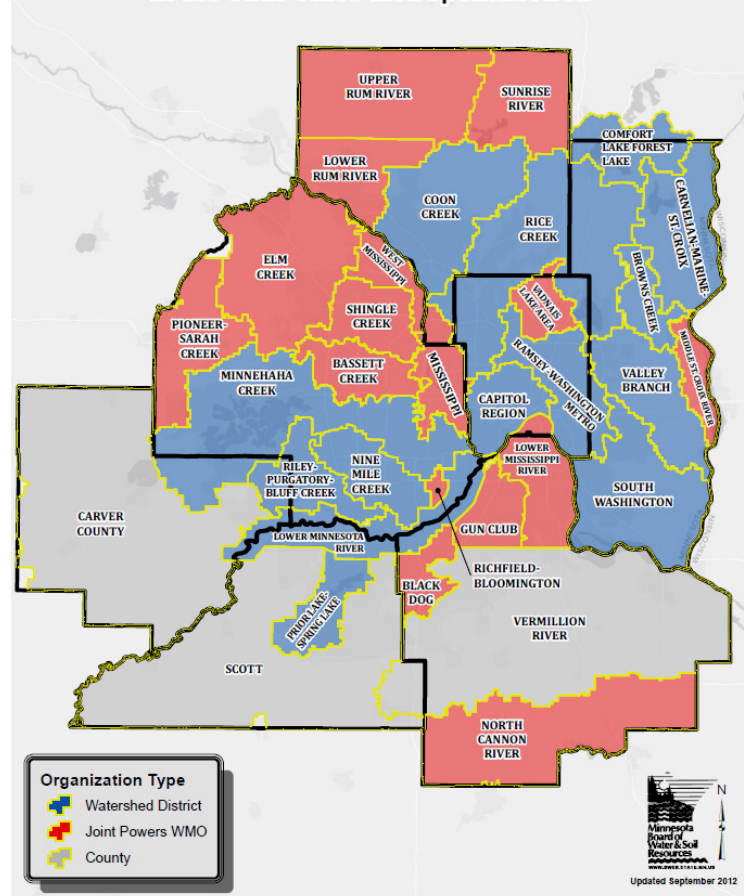
What is a watershed?

Where are you right now? At home at the kitchen table, at the office, in a pew at church? All of these places, and in fact everywhere you go, are in a watershed. A watershed exists anywhere that a raindrop can fall. Rain and snow that fall either soak in to the ground or run off and flow into nearby rivers and lakes. You can find which watershed you live in by visiting <http://tinyurl.com/watershedsmn>.

The entire lower two-thirds of Minnesota eventually drains to the Mississippi River, which continues its journey southward toward the Gulf of Mexico, picking up water, debris and pollution from every state it passes. Within the Twin Cities metro area, the larger Mississippi River watershed is subdivided into smaller river watersheds. Some of the southwestern suburbs like Chaska and Savage drain to the Minnesota River, while the urban cores of Minneapolis and St. Paul send stormwater runoff directly to the Mississippi. The eastern-most communities in Washington and Chisago counties drain to the St. Croix River, which eventually joins with the Mississippi near Hastings.

Like nested Russian dolls, these major river watersheds subdivide even further into local sub-watersheds. The northern half of the City of Forest Lake lies in the Comfort Lake – Forest Lake watershed and drains directly to the lake, while the southern half is actually part of the Rice Creek Watershed and drains to the Mississippi via the Rice Creek Chain of Lakes. The water that falls on rooftops, driveways and streets in Stillwater, Bayport and the other river communities further south, heads straight for the St. Croix River. In Woodbury and Cottage Grove, however, the land drains toward the Mississippi instead. The Valley Branch Watershed follows a diagonal route across Washington County, carrying water from parts of Mahtomedi, Oakdale and even Silver Lake in North St. Paul, southeast through Lake Elmo, into Valley Creek in Afton and finally to the St. Croix River.

Watershed Districts and Management Organizations in the Twin Cities Metropolitan Area



Tips for fostering behavior change

These activities and educational components are most effective when you can use them to build community; it is easier for others to jump in and take environmental action when they can see others getting involved and sharing experiences, which congregations are well equipped to do. Additionally, make it fun and easy! Give people the tools they need to take action today, and you will find a plethora of resources and ideas in the toolkit and on the Green Congregations website: www.mnwcd.org/green-congregations

Build Commitment

Offer Incentives or Prizes: Attract attention by offering something fun!

Use pledges or commitments: Invite people to fill out and return a simple form or sign a pledge.

Use prompts: Ask people to take home a reminder of the commitment or pledge they make, such as on a magnet for the refrigerator.

Create norms: Use announcements or posters to make it clear that “this is how we do things in our congregation.”

Use existing communication channels: Announcements during service, church newsletters or emails, your website or Facebook page.

Use existing events: Incorporate water related messages into coffee hour, education hours, Sunday school, Earth Day events, children’s programs - whatever works!

Build upon existing small groups: Youth groups, men’s and women’s groups, bible studies, choirs, etc.



Photo by Washington Conservation District

Building up a Team & Sustainability

Working with others who are also committed to protecting water resources means you can share the responsibility and effort. Having a team will also ensure sustainability - if one person leaves there are others to continue the good work. If you don’t have one, create a “Green Team” within your congregation, and recruit volunteers. Be sure to include representatives from your building and grounds committee if applicable. Then develop an action plan, inform your congregation, and meet regularly (which could mean monthly, quarterly, whatever works for your group!)

Celebrate!

It’s not all hard work! When you achieve a goal, celebrate! Hold a rain garden dedication ceremony, or host a rain garden ice cream social in the summers and remind folks why your congregation decided to do a clean water project. Share some numbers of success, for instance, your rain garden keeps x number of pounds of algae from growing in nearby lakes. And as always, thank any volunteers who help to create and maintain gardens.

Note:

The advice and ideas in this toolkit are designed for any faith-based community that seeks to address environmental issues facing society. The term “congregations” refers to any organized faith-based group.



Photo by Angie Hong

Did you know?

Minnesota actually has 11,840 lakes, not 10,000!

Easy steps to encourage members to take

- 1. Use your runoff.** Keep water in your yard and reduce runoff by directing downspouts onto your lawn or garden or into a rain barrel. Rainwater is free and can be used for lawns and flower gardens.
- 2. Leave grass clippings on your lawn.** Lawn clippings are rich in nitrogen, essentially free fertilizer! Sweep up any clippings left in the street or on the sidewalk. Grass clippings and leaves left in the street are washed down storm sewers during rainstorms and carry phosphorus and nutrients that feed algae. This can cause excessive algae growth that can harm other plants and wildlife.
- 3. Scoop the poop.** Grab a bag when you grab the leash and pick up after your pets. Pet waste left on the ground can be washed into lakes and rivers carrying with them harmful bacteria that can cause illness in humans and animals.
- 4. Use Chemicals Wisely.** Read and follow the label instructions when using herbicides and pesticides. Use the minimum amount needed to control the problem. If you can, consider using alternatives or natural remedies to control weeds and pests, such as manual removal.
- 5. Fertilize smart.** Sweep up any fertilizer that spills onto hard surfaces. Excess fertilizer washes away into nearby lakes or rivers where it feeds algae, causing rapid growth and algal blooms. Algal blooms starve fish of oxygen and make swimming unpleasant and dangerous.
- 6. Keep a healthy lawn.** A healthy, vigorous lawn needs less watering, fewer chemicals and less maintenance. Aerate your lawn periodically to loosen the soil. Seed bare patches to prevent erosion and soil loss. Mow high - 2.5-3 inches to promote deep root growth and give the lawn a competitive advantage over weeds.
- 7. Plant a rain garden.** Rain gardens are simple bowl shaped gardens planted with native plants and grasses in a strategic place to collect stormwater runoff and help it soak into the ground instead of down a storm drain.
- 8. Replace turf with native plants.** Swap some of your high-maintenance lawn for low-maintenance perennial ground cover, plants and grasses. Native plants have deep roots which help to infiltrate the water to clean and recharge groundwater. Plus native wildflowers are beautiful and provide habitat for bees and butterflies.
- 9. Reduce your footprint.** Replace some pavement - such as a walkway, patio or driveway - with pavers or pervious pavement. The porous surface will allow water to seep through.
- 10. Adopt a storm drain.** Keep your neighborhood storm drains free of leaves, seeds and grass clippings. Storm drains are directly connected to the nearest body of water, and water that runs into the drain carries anything dumped with it, such as grass clippings, leaves, chemicals and trash.

Where in the Watershed?

All Ages

Learn about the watershed where you live. Use a watershed map to identify the lakes, streams and rivers in your watershed. Analyze how the water resources are connected. Have participants use highlighter pens to trace how the water that falls on the property of their homes, schools, or organizations travels to nearby lakes, streams and rivers. Younger members of the group could create pictures or murals. Read about what people can do to conserve water and reduce pollution in the Background section. Encourage people to choose changes they want to make and write these on their watershed picture. Display the picture on the refrigerator or another public place. Plan for a fun celebration of clean water once goals/changes are met, such as a day at the beach, at the sledding hill or on the water in a canoe, kayak or paddleboat.

Suggested supplies:

- Construction or butcher paper
- Markers, paint or crayons
- Images of water cut from magazines
- Watershed map (contact EMWREP and we'll get you one!)

Discussion starter:

What watershed do you live in? Did you know this prior to this activity? Why is it important for participants to know what watershed they live in? How can the behavior of people living in one watershed affect the people in another watershed?

Bio Bingo All Ages

Encourage your group to explore nearby aquatic ecosystems. Use the bio bingo card from the Green Congregations website and search for the organisms listed on the card. Observe the environment using your eyes, a magnifying glass or binoculars, or sample the water with a net. Have players take pictures of the organisms or draw pictures of what they observe. Discuss relationships between the organisms and how changes in the environment may affect them.

Suggested supplies:

- Bio bingo card (www.mnwcd.org/green-congregations)
- Magnifying glass, binoculars and net

Plant a raingarden or native garden

Does your congregation have a lawn, garden or vacant lot nearby? To teach community members about the importance of native plant growth in conserving water and improving water quality, organize a spring and summer project to plant a native species garden around your house of worship, if space permits. Native plant gardens save water, reduce air pollution and beautify the neighborhood. Continue to involve congregation members in garden maintenance throughout the year by hosting monthly garden days. Visit www.bluethumb.org for further information.



Photo by Jenn Radtke

Did you know?

On average, a person uses 80-100 gallons of water a day. The largest use of household water use is to flush the toilet and for bathing.



Discover the secret to leisurely landscaping at www.BlueThumb.org.



Photo by Washington Conservation District

Maintain your drain - Keep storm drains around your church litter-free

Adults, teens and children over 6 with supervision

Runoff from driveways, lawns, houses and parking lots can carry pollutants such as oil, paint and chemicals down storm sewers and into nearby lakes, streams and rivers. Monitoring storm drains can help keep leaves, grass, litter and other items from getting washed into lakes and streams.

Collect everything from the gutter in front of your house, school or organization during a specific time period. Children should be closely supervised, wear gloves, and should only pick up what they recognize and know is safe to touch. Analyze what you found, and ask where it might have come from. Organize volunteers to adopt a block/area to keep free of litter on a regular basis. Share what you are doing and why with neighbors in the area.

Suggested supplies:

- Clear plastic bags
- Protective gloves

Discussion starter:

Were you surprised by the amount you collected? What was the strangest item you found? The largest? How do you think this stuff winds up in the gutters? Do you think this activity has an impact?

Buy or build a rain barrel *Adults, teens and children over 8*

Rain barrels can be placed under a roof downspout to collect stormwater runoff that can be used for watering your lawn and gardens. This reduces runoff that can carry pollutants into streams and rivers. Rain barrels can be purchased at local hardware stores or through special sales organized by government agencies or non-profit organizations.

You can also build your own rain barrel. Your congregation could purchase the supplies and offer free or low-cost workshops for residents who want to build a rain barrel. For instructions on constructing a rain barrel go to www.gertens.com/learn/Conservation/rain-barrels.htm or for more information on rain barrel sales, www.mnwcd.org/planting-for-clean-water and looking for the link to “rain barrel vendors” at the bottom of the page.

Suggested supplies:

- Depends on the style of barrel to be built; see the link referenced above.

Discussion starter:

Would you use a rain barrel? Why or why not? How has using a rain barrel affected your family's water use?

Did you know?

Minnesota had 18.6 million acres of wetlands in 1850. In 2012 the MN DNR reported that there are only 10.62 million acres remaining.

Lawn care contest *Adults*

Is a beautiful lawn possible without the use of chemicals, fertilizers and lots of watering? The actions you take to care for your lawn and garden can have a tremendous impact on the environment. Traditionally, yard care includes large quantities of water, fertilizers, pesticides, weed control and money. Hold a contest or demonstration project with your neighbors to show what can be done using earth-friendly methods. Invite Master Gardeners from the University of Minnesota Extension to serve as judges. Visit www.mnwcd.org/lawn-care for eco-friendly lawn care tips.

Rain gauge monitoring *All Ages*

Install a rain gauge on your property to monitor daily precipitation totals. Compare results from different locations in the community. Data can be shared directly with the State Office of Climatology (www.climate.umn.edu) and is used to develop maps and reports of precipitation trends.

Water Watch *Youth grades 3-6*

Find a sink with a hot water faucet. Ask youth to write down how many cups of water they predict will be wasted before the water runs hot. Turn on the faucet and collect water in the bucket until the water is hot. Measure the water collected. Ask for youth to share their predictions.

Suggested supplies:

- Large bucket, stop watch, measuring cup, paper, pencils

Discussion starters:

How many cups do each of us (or each family) waste each day (multiply number of youth by cups wasted)? How can we conserve more water in daily life?



Photo by Washington Conservation District



Photo by Angie Hong

Did you know?

Because of impervious surfaces like pavement and rooftops, a typical city block generates five times more runoff than a wooded area of the same size.



Photo by Jenn Radtke

Organize a river clean-up

Adults and children over 5

Hold a clean-up day on a section of stream, river or lake. Keep track of the type and amount of garbage found. Discuss with your group where the waste could have come from and how garbage could be kept out of rivers and streams. Consider offering prizes for the biggest or strangest item found. Resources are available to help you identify a stream to clean up and to ensure the safety of your group:

- The Adopt a River program through the Minnesota DNR helps group select a site, provides a How-To kit for organizing a clean up, and supplies free bags and gloves. Volunteers are required to commit to conducting an annual clean up for two consecutive years. For more information, visit www.dnr.state.mn.us/adoptriver/index.html.
- Your watershed district may provide assistance in selecting a site or offer other opportunities to get involved.

Organize a Fall Leaf Clean-up

Adults and children over 5

Community Clean-Ups for Water Quality are local projects that can significantly reduce nutrients and soil flowing into lakes and rivers by removing leaves and yard debris from city streets. Volunteers rake, sweep and bag leaves, dirt and debris blocking storm drain grates on city streets. The organic material can then be composted. You can partner with the Freshwater Society to register your groups and find tips, tools and resources. The website is here: <http://freshwater.org/community-clean-ups-for-water-quality/>

Volunteer to monitor water quality

Adults and teens

Volunteers obtain data on water quality and biological communities to assess the overall health of streams and wetlands. Visit the Metropolitan Council CAMP program page here: <http://www.metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management/Rivers-Streams-Lakes-Monitoring.aspx>

"This Drain to the River!" Mark the storm drains

Adults and children over 10

When volunteers mark or stencil a message next to the storm drains in the street, it reminds everyone that whatever goes down the storm drain ends up in the nearest body of water. A free Storm Drain Stenciling Guide is available online at www.cleanwatermn.org, under About You. Storm drain stenciling must be coordinated with city government, and stencils are available to borrow from EMWREP and the Washington Conservation District.



Photo by Washington Conservation District

Did you know?

Only 1.0% of the Earth's water is available for drinking. The oceans hold 97% of Earth's water, and only 3% is fresh water. Of that 3%, 2% is frozen, leaving only 1% for drinking water, but only if it is clean!

Did you know?

Minnesota has 90,000 miles of shoreline. That's more than California, Florida and Hawaii combined!



Photo by Jenn Radtke

Raingarden or Project Dedication Ceremonies

Many congregations hold dedication ceremonies to celebrate the completion of a raingarden or other clean water project. It may be as simple as a prayer or blessing of the garden, or you may include the dedication ceremony with another event such as a picnic or BBQ.

Consider making this blessing an annual event to keep the congregation involved and inform new members about the clean water efforts your congregation has made. For instance, since raingardens and native gardens attract pollinators such as bees and butterflies, each year when the butterflies make their appearance, or before their begin their long migration, one church has done a "Blessing of the Butterflies."

Many congregations hold dedication ceremonies, such as this 2010 photo from First Presbyterian Church - Stillwater during their Parking Lot & Raingarden Ribbon Cutting Ceremony. To the left is a photo of Woodbury Community Church's Raingarden Dedication Ceremony, appropriately, in the rain!



Volunteer Days

Involving members of your congregation is key to the success of your gardens. Plan a Spring Clean Up Day to tackle those spring cleaning tasks, and host monthly garden parties to get some weeding done. Some churches even have families "adopt" a garden or a portion of it for parts of the summer.

Fundraising

Consider hosting a plant exchange or a plant sale as a way to raise funds for things such as a youth group mission trip, and be sure to include a table with information and displays about clean water.

Vacation Bible School

Many congregations host a week of Vacation Bible School (VBS) for the children in their congregation and community. Consider how you can incorporate your clean water projects and a clean water message into VBS by using some of the activities in this toolkit or creating your own additions. Clean water messages are most powerful when they are local and relateable, so include the Mississippi, St. Croix, or whatever the nearest body of water is in your conversations. Living Waters for the World has a VBS curriculum called "Clean Water for All God's Children" that could be used and adapted to have a more local message. <http://www.livingwatersfortheworld.org/vbs.php>

Did you know?

A five minute shower uses about 10-25 gallons of water. A full bath takes 70 gallons.

Educational Displays & Supplies

Have an event, environmental fair, or even a rummage sale? We have a variety of educational displays, brochures and resources you are welcome to check out and use from EMWREP for FREE! We can even connect you with guest speakers or master gardeners to help out with your events. Just call or email to reserve supplies for your event, and call early!

East Metro Water Resource Education Program (EMWREP)

EMWREP is a partnership formed in 2006 to serve 18 local units of government in the east metro area. The purpose of the shared education program is to provide education about the impacts of non-point source pollution on local lakes, rivers, streams, wetlands and groundwater resources and to engage people and communities in projects that will help to protect and improve water quality in the region. The two coordinators for the program are:

Angie Hong, Education Specialist 651-275-1136 x35 angie.hong@mnwcd.org

Jenn Radtke, Education Assistant 651-275-1136 x44 jradtke@mnwcd.org

On the back cover: All Saints Lutheran Church Member next to a Little Free Library in their Raingarden. A Little Free Library is a great addition to any raingarden or native planting. More information can be found at <http://littlefreelibrary.org/>.



Subscribe to our Clean Water Newsletter just for congregations by contacting Jenn Radtke - jradtke@mnwcd.org

Green Congregations Website - www.mnwcd.org/green-congregations

Print resources, links, maintenance information, additional volunteer opportunities and Green Congregation Case Studies are available on the Green Congregations website.





www.mnwcd.org/green-congregations

The original version of this publication was created by Hennepin County Environmental Services. It has been adapted for use in Washington and Ramsey Counties, MN by the East Metro Water Resource Education Program with support from the Ramsey Washington Metro Watershed District.

