



# GILLS CREEK WATERSHED ASSOCIATION

## WATERSHED CHAMPIONS: ADDITIONAL INFORMATION AND RESOURCES

Gills Creek, along with its feeder streams and source waters, has become significantly polluted, yet provides many recreational opportunities and hosts valuable wildlife habitat. We need to improve the quality of these waters, and that is a goal of the Gills Creek Watershed Association (GCWA). It advocates for better management of our waters, works to restore the waterbodies in the system (rivers, streams, lakes), and strives to educate residents about both the opportunities and the challenges related to water quality and the environment. The new **Watershed Champions** program is an inspiring and rewarding way for each community member to help improve our watershed and thus our waterways.

A watershed is that area of land that channels or sheds rainfall and other water runoff into a specific body of water. The Gills Creek Watershed encompasses 47,700 acres of land and is estimated to be home to more than 110,000 people. Understanding the connections among our properties and the waters that flow into Gills Creek is critical if we are to successfully restore environmental quality.

Every single person, young and old, can make a difference, often in simple ways in their own yards and gardens. And, if everyone can take a few simple steps, collectively we can help clean our waters and improve our environment, and thus our health, creating a continuous corridor of rich habitat that animals and humans would enjoy.

The Watershed Champions program will recognize each of you for your efforts to improve your yard and garden and, in doing so, help restore water quality in the Gills Creek Watershed. By completing the steps explained below and informing the GCWA of your efforts, you and your property can be certified as a GCWA WATERSHED CHAMPION. The GCWA also recognizes that children are our future, and this document provides some specific suggestions for child-friendly activities. If you have children in your life, we encourage you to include them in as many of these certification steps as possible.

## PROGRAM VISION

The Watershed Champions program will help residents use and care for their property in ways that help to enrich, protect, and sustain the Gills Creek Watershed. Residents will:

- Understand the relationship of their land to the watershed.
- Learn how to minimize stormwater runoff and pollution, thereby improving water quality in the Gills Creek.
- Create a healthy, diverse garden and yard ecosystem on their property.

## PROGRAM GOALS

Upon completion of some specific steps described below, residents will be able to:

- 1) Better understand how water from their property can ultimately affect the quality of water in the Creek itself.
- 2) Improve and sustain the quality of the water moving over and through the soil on their property.
- 3) Understand how residential hard surfaces (roofs, driveways, patios, etc.) impact the volume and quality of water in community storm drains, and thereby our creeks and rivers.
- 4) Use native plants and/or garden and lawn designs that create habitat for native wildlife that benefit the watershed.

## STEPS LEADING TO CERTIFICATION

To become a designated GCWA Watershed Champion, applicants must complete the three Steps below. Each of these three Steps contains a number of possible commitments, and only a few of those need to be met to meet the requirements for certification. However, the more you can accomplish, the more positive impact you will have on our environment. Also, if you have not yet taken enough actions to qualify, please consider how you might accomplish more. We encourage including the whole family in this program. (See Step 3. G. for specific examples of children's activities.)

## STEP 1 – Know the Destination of Rainfall that Lands in Your Yard

How is it that the way we garden and maintain our yards on our own properties affects the quality of flowing water some distance away? The water in a flowing system, like Gills Creek, comes from a variety of sources, including rain and irrigation runoff from community properties, roads, and streets and from undeveloped land, as well as local springs. The area of

land from which such a variety of water sources drains into a body of water is called a “watershed.” Thus, it is those collective drainage pathways that define the boundaries of the Gills Creek Watershed. As the water finds its way from its source to a receiving creek or river, it is picking up and carrying a large variety of materials that it encounters along the way.

What is the pathway for water from your yard as it finds its way to Gills Creek? For many residents it will be through the storm drain system. Those storm drains along community streets are collecting runoff from excess irrigation and rain events, and taking it directly to a body of water, usually without treatment to remove harmful substances. For residences adjacent to water bodies, runoff can go directly into the water, by-passing any storm drain. What paths must water from **your** property take to find its way into the Gills Creek? Or might it actually be retained within your or nearby properties through infiltration into the soil? The water that soaks into the ground provides water for the plants and organisms residing in the soil, and some may also go deeper and help restore ground water supplies. What are the possibilities?

**For Step 1, know the destination of rainfall that lands in your yard. To complete this Step, observe what is going on in your yard during a heavy rain to determine where that water is going. Then check off all of the following destinations that apply.**

- A. Remains in my property and percolates into the soil or is retained by a water feature or reservoir, such as a pond, rain garden, or rain barrel.**
- B. Runs off into neighboring properties.**
- C. Runs off into a nearby water body, such as a stream or lake.**
- D. Runs off into a nearby storm drain.**

**If you want to learn more:**

You may want to go a bit further to confirm that you live in the Gills Creek watershed or discover that you live in a sub-watershed of the Gills Creek. Alternatively, you may live in a different watershed all together, and **we are not limiting this program to residents of the Gills Creek Watershed. Anyone can be certified a Watershed Champion if they take the Steps for certification, which are broad-based and applicable to watersheds in general.** All water from the Gills Creek watershed eventually drains into the Congaree River. Other nearby watersheds may also drain into the Congaree, or, alternatively, the Broad or the Saluda Rivers.

You can use one of the map links provided below to identify the location of your home and determine which watershed you are in.

- Map 1. Richland Count GIS Internet map for Richland County residents ([Richland County, SC, Internet Mapping \(richlandmaps.com\)](http://RichlandCounty, SC, Internet Mapping (richlandmaps.com))).

First have a look at this short video to easily learn how to access the watershed layer of the Richland County GIS

Internet map: <https://drive.google.com/file/d/1T-dVTCOUec-z6-dlOYPKnyOTCsUKtt7a/view>

OR

- Map 2. [SC Watershed Atlas](#) for all SC residents. Begin by clicking OK at bottom of the site page and turning on NHD Labeled Streams.

**SC Watershed Atlas Directions:** Type your address in the white search box located on the top left corner of the map. Your address should pop up as a suggestion. Click on your suggested address, and the map will now zoom in on your home location.

On the lefthand side of the SC Watershed Atlas, click on the name “Nat’l Watershed Boundaries.” This is the first layer listed. Click the box beside “12-Digit Watersheds.” The box should now be blue with a white check mark in the box. Click on the map by your home. A box will pop up that says “12-Digit Watershed Name: \_\_\_\_\_.” This is the name of the watershed in which you live.

*For more information on the Gills Creek waters and watershed see: (<https://www.gillscreekwatershed.org/what-we-do/> “What is a watershed.”*

## STEP 2 – Improving and/or Sustaining Water Quality

Excess fertilizer, pesticides, herbicides, dog waste, sediment, oil, and trash tend to be carried off our land by rain storms, or even heavy irrigation. When these pollutants get into waterbodies, they impact the living things (fish, insects, algae, plants, etc.) in our streams, rivers, and lakes. Here are some measures you can take to help minimize the pollutants from your property that reach your nearest storm drain and/or waterbody. You will need to do at least 3 of these to meet certification requirements.

### A. Eliminate or reduce the use of chemical fertilizers, insecticides, and/or herbicides.

*For more information see:*

[Understanding Fertilizers & How to Use Them | joegardener®](#)

*More on soil testing:*

<https://www.clemson.edu/public/regulatory/ag-srv-c-lab/soil-testing/index.html>).

Often, we apply fertilizers that are not needed or used, and consequently they are transported by water runoff. Consider whether a fertilizer is really needed, which you can determine by having

your soil tested by your local extension agent and/or using a home soil test.

Where possible make sure nutrients are sufficient for plants through strategic planting and use of compost and mulch. If fertilizers are needed, measure applications and do not over-fertilize. Overuse of fertilizers often contributes harmful amounts of nitrogen and phosphorus into waterways. These nutrients can fuel the growth of algae, which will ultimately die. The degradation of the algae will deplete dissolved oxygen in the water and harm fish and other wildlife. Also, some algal blooms can release toxins into the water that harm humans, pets, and wildlife.

**B. Pick up and properly dispose of pet waste from your yard.**

When pet waste is left on the ground, it can be washed into storm drains and waterways. Not only does dog waste contain harmful pathogens (such as bacteria, viruses, and parasites), but it also contains three times as much bacteria as human waste. Also, its degradation in waterways will decrease oxygen and may produce ammonia. Such conditions, particularly in warmer times of the year, can lead to algal blooms and fish die off, and be dangerous for those using the water for recreation.

*For More Information:* [The 7 Best Dog Poop Disposal Options \(+ eco-friendly rating\) — Our Pet's Health \(ourpetshealth.com\)](https://ourpetshealth.com/7-best-dog-poop-disposal-options/)

**C. Reduce the need for irrigation and chemical fertilizers by reducing lawn area and /or increasing planting of native species.**

Lawns are biological deserts, don't tolerate drought well, and are poor at absorbing water from rain storms (heavy rainstorms tend to cause water runoff from lawns). In contrast, native plants do not need fertilizer, need little or no watering, and do a good job of absorbing stormwater (native trees especially).

*For More Information:* <https://hgic.clemson.edu/factsheet/water-management-in-the-home-landscape/>  
<https://hgic.clemson.edu/factsheet/trees-for-stormwater-management/>

**D. Use native groundcovers and leaf mulch to stabilize erosion-prone areas and prevent erosion.**

Bare soil, unprotected by ground covers and mulch, can be washed away and enter nearby waterways. Water polluted with this sediment becomes murky, which prevents animals from seeing food and inhibits natural vegetation from growing in water. Sediment accumulation in stream beds disrupts the natural food chain

*For more information see:*  
[Ground Covers: Protect Your Soil - Mother Earth Living](https://hgic.clemson.edu/factsheet/groundcovers/)  
<https://hgic.clemson.edu/factsheet/groundcovers/>  
<https://hgic.clemson.edu/factsheet/mulch/>

by destroying the habitat where the smallest stream organisms live and can cause large declines in fish populations.

**E. Regularly pick up human-made trash in and around your yard and near your storm drains and properly dispose of it.**

Recyclables can be placed in recycle carts, and any other waste goes in your trash bin. Lightweight cans, plastic bottles, straws, and bags are easily washed into storm drains by heavy rains and become the source of much of the litter in our waterways.

**F. If you are able, commit to helping keep the storm drain closest to your home clear of debris and trash. Consider engaging others in your neighborhood to keep nearby drains clear.**

You'll need a shovel, wheelbarrow or cart, a trash bag, and a pair of gloves. Dispose of human-made garbage in a bag (that will go in your trash bin), and you can put the organic debris in a compost pile or garden border.

*For more information see:*  
<http://drainsarentdumps.org>

**G. Have a rain garden in your yard to help capture runoff from your roof, driveway, sidewalks, or lawn.**

Rain gardens capture water and allow it to filter slowly through the ground. They can be as simple as adding attractive vegetation to low spots in your yard, or as involved as directing downspouts to a shallow

depression that you excavate and fill with appropriate soil, plants, and mulch. They do not hold standing water for very long and do not attract mosquitos. They support water-loving native plants that also tolerate drought, so that, once established, you will never need to water the rain garden!

*For more information see:*  
[Carolina Rain Garden Initiative](#)  
[Master Rain Gardener](#)

**H. Harvest rainwater with rain barrels or other devices.**

The Gills Creek Watershed is 55% urban land use (based on DHEC's Watershed Atlas). That means there are a lot of opportunities to capture stormwater runoff with "best management" practices like rainwater harvesting. Rain barrels fill up in minutes in heavy rainstorms and are best used in our area to direct water to rain gardens or other garden beds that need irrigation.

*For more information see:*  
[Rainwater Harvesting Systems Guidance For Schoolyard Applications Hgic 1729](#)  
[Cc How To Build Your Own Rain Barrel](#)  
[HGIC 1883 Rain Chain](#)

**I. Minimize impervious (hard) surfaces such as concrete, mortared or asphalt driveways, sidewalks, and patios on your property. Instead, have pervious/permeable surfaces or planted beds.**

If you are making outdoor changes that commonly involve addition or renovation of hard, impervious surfaces, such as patios, driveways, or concrete paths, think about using porous materials instead. Impervious surfaces are those through which water does not penetrate, and

instead flows over that surface and moves “downhill.” With increases in impervious surfaces in our communities, more water enters local streams and at a faster rate and higher temperature. With heavy rains, that can result in local flooding. Such heavy flows also cause erosion, picking up more surface debris and sediment, which can seriously degrade water quality. Such negative impacts to water quality can be seen with as little as 10% impervious surface in the watershed.

***What can you do to reduce impervious surfaces?***

Although this directly addresses Massachusetts communities, much of it applies to SC: [Reducing Impervious Surfaces \(mass.gov\)](https://www.mass.gov/info-details/reducing-impervious-surfaces)

***Also see:***

<https://hgic.clemson.edu/factsheet/an-introduction-to-porous-pavement/>

## **STEP 3 -Enriching the Ecosystem**

As we plan our home landscapes, we often seek beauty, neatness, and convenience, without necessarily thinking about the role that biodiversity can play in sustaining those qualities. Essential within these complex communities are native plants, which support the complex web of soil organisms, plants, insects, birds, and other animals that enrich our environment. There are a number of choices home landscapers can make to provide habitat for wildlife and retain sufficient water for the property. These include use of native plants, rain barrels, rain gardens, composting, and mulching, among others. As we take such steps and see their results, there is also the opportunity to share our experience with others and grow our community of Watershed Champions. You will need to do at least 3 of the following actions to meet certification requirements.

**A. Plant more native trees, shrubs, and herbaceous plants while reducing lawn and non-native plants (often referred to as “exotics” or “ornamentals”).**

Most plants commonly carried in nurseries and promoted for homeowners are non-native, although native plants are more commonly available than they used to be. Learn about what is native and what is not, and ask for native plants when you visit a nursery. Take opportunities in your garden to remove any invasive plants that are non-native and aggressively overwhelm growth of natives. A current list of invasives is provided by the SC Invasive Plant Council (examples include Princess Tree, Bradford Pear, kudzu, Japanese privet, and Chinese privet).

*"If each American landowner made it a goal to convert half of his or her lawn to productive native plant communities...[we could] collectively restore ecosystem function to more than twenty million acres...." That is larger than the combined areas of most of our major national parks! (From Nature's Best Hope, by Douglas Tallamy, 2019, p 62).*

**For more ideas and help go to:**

[North Carolina Extension's Gardener Plant Toolbox](#)

[Native Plants — South Carolina Wildlife Federation \(scwf.org\)](#)

<https://www.scwf.org/habitats>

[SC Native Plant Society \(scnps.org\)](#)

[National Wildlife Federation](#)

[Audubon Society Native Plants Database](#)

[Selecting Plants For Pollinators A Regional Guide For Farmers, Land Managers, And](#)

[Gardeners In The Southeastern Mixed Forest Province](#)

[Selecting Plants For Pollinators A Regional Guide For Farmers, Land Managers, And](#)

[Gardeners In The Outer Coastal Plain Mixed Province](#)

[Xerces Society Pollinator Plants Southeast Region](#)

**B. If you live along a pond or creek, have a buffer zone that is a border of appropriate native plants along the water's edge.**

This will help prevent pollutants and sediment from washing into the water, while adding beauty and interest, as well as wildlife habitat.

**For more information:**

[Stream Bank Repair \(clemson.edu\)Shorescaping Freshwater Shoreline HGIC 1855](#)

**C. Retain as much plant biomass (natural litter from trees, etc.) in your yard as possible.**

Fallen leaves and branches become free mulch and compost! They retain the nutrients in your yard and build good soil. You can let the leaves stay where they fall over winter, and they will provide protection for those insects that overwinter in plant debris and soil (such as many pollinators). You can also mulch your beds with the leaves

and debris, or build a compost pile, which can include vegetable kitchen scraps as well.

**For more information try:**

[How to Make a Compost Pile? - The Scientific Gardener](#)

<https://hgic.clemson.edu/factsheet/composting/>

<https://hgic.clemson.edu/composting-tips/>



**D. Have a water source for wildlife.**

Water is essential for all wildlife, including insects, reptiles, birds, and mammals. Water sources could be a bird bath, fountain or other water feature, a small pond/water garden, or an adjacent stream or pond. You can create a safe place for butterflies and other pollinators to drink by placing small stones or marbles in the bottom of a shallow dish and filling it with water. Just be sure to keep such water supplies clean to prevent the spread of disease and growth of mosquitos.

*For more information try:*  
[How to Clean a Birdbath](#)  
[— Attracting Birds to Your Yard | Audubon](#)

**E. Help to inform the landscaping industry.**

Share the ideas and lawn/garden ethic presented in Watershed Champions with a landscape maintenance person or company. If we can begin to promote the capacity of landscapers to create an ecologically healthy garden and lawn environment, we make even more headway in promoting water quality and ecological health to our yards and watersheds.

**F. Help to get your neighbors involved.**

Share the Watershed Champion ideas and information you have learned with your neighbors. Tell them about your successes and alert them to efforts that may not have worked so well in your property. The more extensive the area included in the “Champion” approach, the greater the impact on the watershed.

**G. Engage with children and have them complete at least one of the activities below.**

Children have been increasingly disconnected from the natural world. Creating a rich ecosystem in your own yard gives them the opportunity to enter and learn about the natural world every day. It can instill in them a sense of wonder, awe, and stewardship. Some activities are listed here, and you may think of others.

- Build a bird house: <https://www.leapfrog.com/en-us/learning-path/activities/make-a-birdhouse-kids-activity>
- Make a bird feeder: <https://www.audubon.org/news/how-make-diy-bird-feeder-recycled-materials>
- Make a toad house: <https://joybileefarm.com/making-a-frog-house-for-your-garden/>
- Plant a pollinator garden: <https://kidsgardening.org/resources/lesson-plans-planning-a-pollinator-garden/>, <https://kidsgardening.org/resources/garden-activities-plant-a-butterfly-garden/>
- Make a pollinator field guide <https://kidsgardening.org/resources/garden-activities-pollinator-field-guide/>
- Keep a pollinator journal: <https://kidsgardening.org/resources/garden-activities-pollinator-journal/>
- Create a compost bin: <https://kids.nationalgeographic.com/books/article/create-compost>

- Experiment with water and runoff: <https://kidsgardening.org/resources/garden-activities-catching-water/>
- Build a watershed: [Build a watershed fam.pdf \(pbskids.org\)](#)
- Build a crumpled watershed model: [Crumpled Watershed Model opt.pdf \(unl.edu\)](#)
- How much water runs off activity: [How Much Water Runs Off opt.pdf \(unl.edu\)](#)
- Read “A Fish’s Wish: A tale of polluted runoff and how to prevent it.”: [book \(onlyraindownthedrain.com\)](#)
- Complete the “Be a Drain Ranger” coloring and activity book: [ColoringBook-BW-FINAL \(onlyraindownthedrain.com\)](#)
- Complete a stormwater runoff activity: <https://littlebinsforlittlehands.com/stormwater-runoff/>
- Go for a stormwater walk: <https://water.unl.edu/documents/Stormwater%20Walk%20opt.pdf>
- Read books on watersheds, wildlife habitat, and ecosystems
- Be a “biodiversity detective”: <https://kidsgardening.org/resources/garden-activities-biodiversity-detective/>

## Ready to Apply for Certification?

Submit your completed Application for Watershed Champion Certification, showing the specific actions under each step that you have completed or fulfilled. You will receive a certificate and opportunity to obtain a Home Champions yard sign. Your accomplishment may also be recognized in the GCWA newsletter the Big Splash, on our website, and in our annual report.

## Can You Do More?

Do you live in a neighborhood with an HOA? Some of the ideas suggested in this program might not fit well with typical HOA guidelines. Consider talking with your HOA Board about changing some of the “rules” that limit the ecological health of yards and neighborhoods and encourage the HOA to support and recognize GCWA Watershed Champions. Let us know if you would like someone from our leadership to speak with your Board or membership! Contact us at [coordinator@gillscreekwatershed.org](mailto:coordinator@gillscreekwatershed.org).