WATERSHED CHAMPIONS: INFORMATION AND RESOURCES

The West Fork River and its creeks are polluted, but provide our water supply, recreation, and fish and wildlife habitat. We need to improve the quality of our waters, and that is a goal of the Guardians of the West Fork River. We advocate for better management of our waters, work to restore the river and creeks, and work to educate people about the opportunities and the challenges related to water quality and the environment. The Watershed Champions program is a way for each community member to help improve our watershed and our waterways.

A watershed is the area of land that channels or "sheds" rainfall and other water runoff into a particular body of water. The West Fork Watershed is all of the land where the creeks run into the West Fork, from the headwaters near Rock Cave in Upshur County to where it joins the Tygart to make the Monongahela in Fairmont. Major creeks are Booths Creek, Ten Mile, Simpson Creek, Limestone, Elk Creek, Lost Creek, Hacker's Creek, Stone Coal, and Polk Creek. It has 881 square miles of land, over 1800 miles of streams, and is home to more than 105,000 people.

We need to understand the connections among our own yards and land and the water that flows into the West Fork to make our creeks and river healthy again. Every single person, young and old, can make a difference, often in simple ways in your own yards and gardens. If everyone takes a few simple steps, we can help clean our waters and improve our environment and our health, making a healthy, rich, and beautiful landscape that wildlife and people enjoy.

The Watershed Champions program will recognize you for your efforts to improve your yard and garden and help restore water quality in the West Fork Watershed. By completing the steps explained below and informing the Guardians of your efforts, you can be certified as a Guardians Watershed Champion. The Guardians also recognize that children are our future, and these resources include specific suggestions for children to take part. If you have children in your life, we encourage you to include them in as many of these certification steps as possible.

WHAT IT'S ABOUT

The Watershed Champions program will help you use and care for your property in ways that help to enrich, protect, and sustain our watershed and all the life it supports. Champions will:

- Understand the relationship of their land to the watershed.
- Learn how to minimize stormwater runoff and pollution, improving water quality in the West Fork and its tributaries.
- Create a healthy, diverse garden and yard or woods and fields ecosystem on their property.

When you have completed the steps below, you should be able to:

1) Understand more about how water from your property can affects the quality of water in our creeks and river.

2) Improve quality of the water moving over and through the soil on your property by understanding how residential hard surfaces (roofs, driveways, patios, etc.) and unpaved driveways and roads change the amount and quality of water in our community storm drains, creeks, and the river, and understanding what is particularly harmful to our water and how to prevent it getting in.

3) Use native plants or garden and lawn designs or rural property management that create habitat for native wildlife that benefit your property and the watershed.

STEPS FOR CERTIFICATION

To become a certified Guardians Watershed Champion, you must complete the three Steps below. Each of these three Steps contain possible things to do, and you only need to do a few to meet the requirements for certification. However, the more you do, the more you will improve our environment. If you have not yet taken enough actions to qualify, look at what else you can do. We encourage including the whole family in this program. (See Step 3 for activities for kids.)

STEP 1 – Know where the rain and snow that lands in your yard or property goes

How does the way we maintain our yards, garden, farm, or maintain our rural property affect the quality of the river water far away? The water in a flowing system, like West Fork, comes from a variety of sources, including rain and irrigation runoff from properties, roads, and streets, and from undeveloped land, as well as local springs. The area of land where the water flows into a stream is called a “watershed.” Those collective drainage paths that define the boundaries of the West Fork Watershed. As the water finds its way from its source to a creek or river, it is picking up and carrying some of the materials it encounters along the way.

What is the path for water from your yard or property as it finds its way to the West Fork? For many residents it will be through the storm drain system. Those storm drains along streets are collecting runoff from excess irrigation and rain, and taking it directly to a body of water, usually without treatment to remove harmful substances. For rural property to lakes or streams, runoff can go directly into the water. What paths does the water from your property take to find its way into the West Fork? Or does it actually stay within your or nearby properties through soaking into the soil? The water that soaks into the ground provides water for the plants and organisms that live in the soil, and some may also go deeper and help restore ground water supplies. What are the possibilities?

Identify your watershed and subwatershed.

You can use this map from the Environmental Protection Agency to see your watershed

How's My Waterway? https://mywaterway.epa.gov/community/

It will also show you the health of all the nearby creeks – whether they are safe for drinking, swimming, eating fish, and aquatic life – and if not, why not. Sadly, most of our water that has been checked is not healthy for one or more of these uses. While our watershed is full of abandoned coal mines and gas wells which affect the watershed, the largest sources of pollution in our streams are sewage and sediment – from both town and country.

Just type your address in the search box – or you can zoom and scroll around the map to look at different places.

You may live in a different watershed, and we are not limiting this program to residents of the West Fork Watershed. Anyone can be certified a Watershed Champion if they take the Steps for certification, which apply to watersheds in general. All water from the West Fork Watershed eventually drains into the Monongahela River, the Ohio, and the Gulf of Mexico. Other nearby watersheds also drain into the Monongahela, or on the west and south, into the Little Kanawha.

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.

1) Remains on 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.
2) Runs off into neighboring properties.
3) Runs off into a nearby water body, such as a stream or lake.
4) Runs off into a nearby storm drain.

STEP 2 – Improving or Sustaining Our Water Quality

Too much fertilizer, pesticides, herbicides, dog waste, sediment, oil, other chemicals, and trash get carried off our land by rain storms, or even heavy irrigation. When these pollutants get into water bodies, they affect the living things (fish, insects, algae, plants, etc.) in our streams, rivers, and lakes. In our watershed, sewage and pasture runoff also put bacteria in our water. Here are some things you can do to help minimize the pollutants from your property that reach your nearest storm drain or waterbody. You will need to do at least 5 of these to meet certification requirements.

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

Often, we apply fertilizers that are not needed or used, and so they are washed away. Consider whether you really need a fertilizer, which you can determine by having your soil tested by your local extension agent or using a home soil test.

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

B. **Pick up and properly dispose of pet waste from your yard. If you have animals or poultry, fence off creeks.**

When pet waste is left on the ground, it can be washed into storm drains and waterways. Not only does dog waste contain bacteria, viruses, and parasites, but it also contains three times as much bacteria as human waste. Also, when it decays in waterways it uses up oxygen and may produce ammonia. That, can lead to algae blooms and fish die off, and be dangerous for those using the water for recreation,

especially in warm weather. Livestock in the creek not only contribute manure, but beak down banks and churn up sediment.

C. **Know how to dispose of used oil, unused medications, and other waste that should stay out of the water.**

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D. **Maintain your septic system or your line to the public sewer.**

The largest source of pollution in our watershed is contamination from fecal coliform, a bacteria that indicates other germs are also getting into our water from sewage, pastures, and other sources like pet waste.

For More Information: The 7 Best Dog Poop Disposal Options (+ eco-friendly rating) — Our Pet's Health (ourpetshealth.com)

E. **Reduce the need for watering, irrigation, and chemical fertilizers and herbicides by reducing lawn area or increasing native plants, or both.**

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). 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/

F. **Use native groundcovers and leaf mulch to stabilize bare 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 keeps natural vegetation from growing in the water. Sediment accumulation in stream beds disrupts the natural food chain, reducing fish and other stream life, by destroying the habitat where the smallest stream organisms live and can cause large declines in fish populations.

For more information see:

Ground Covers: Protect Your Soil - Mother Earth Living

https://hgic.clemson.edu/factsheet/groundcovers/

https://hgic.clemson.edu/factsheet/mulch/ 6

The West Virginia DNR Wild Yards program https://wvdnr.gov/wp-content/uploads/2021/05/wildyardsbook03-1.pdf has information about creating a natural environment and wildlife habitat in your yard or on your property, including landscaping advice, that will also protect the watershed.

G. 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.

H. **If you can, commit to helping keep the storm drain closest to your home clear of debris and trash. Consider working with 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

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

For more information see:

Carolina Rain Garden Initiative

Master Rain Gardener

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!

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

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:

https://dep.wv.gov/WWE/getinvolved/WET/Pages/Rain-barrel-program.aspx

Rainwater Harvesting Systems Guidance For Schoolyard Applications Hgic 1729

Cc How To Build Your Own Rain Barrel

HGIC 1883 Rain Chain

K. **Cut down on hard surfaces like concrete, mortared or asphalt driveways, sidewalks, and patios on your property. Instead, have surfaces that let water into the ground, like gravel, or planted beds.**

If you are making outdoor changes that commonly involve addition or renovation of hard 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 the surface and moves downhill. More hard surfaces in our communities mean more water enters local streams and at a

faster rate and higher temperature. With heavy rains, that can cause local flooding. Heavy flows also cause erosion, picking up more surface debris and dirt, which can make water quality much worse.

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)

Also see:

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

STEP 3 -Enriching the Ecosystem

As we plan our yards and gardens, we want them to be beautiful, neat, and convenient, without thinking about how biodiversity – the variety of life – can help. Native plants support the complex web of soil organisms, plants, insects, birds, and other animals that enrich our environment. There are many 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 do that and see the good results, we can 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 plants while reducing lawn and non-native plants (often called "exotics" or "ornamentals").**

Most plants commonly carried in nurseries and promoted for homeowners are not native, although native plants are more 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. 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.

If you have rural property, learn about stream bank repair [info from DEP rural property]

For more information:

Stream Bank Repair (clemson.edu)Shorescaping Freshwater Shoreline HGIC 1855

C. **Retain as much yard waste (grass clippings, 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 and lawncare 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 taken. You will receive a certificate, a decal, and an opportunity to obtain a Watershed Champions yard sign. Your accomplishment may also be recognized on our website, and in our annual report, and at West Fork Watershed Day

https://guardiansofthewestfork.org/watershed-champions/

Or contact us at admin@guardiansofthewestfork.org