Rain Garden

Raccoon Creek Explorers Activity #9

Supplies:

- Shovel
- Native Plants
- Soil Additives (ex. compost, mulch, and topsoil)
- Measuring Tape
- Watering can or hose
- Perennial Plants

Vocabulary:

Stormwater: stormwater is water that originates from rain, including snow and ice melt.

Runoff: the draining away of water including substance carried in it from the surface of an area of land, a building or structure, etc.

Pollution: the presence of or introduction into the environment of a substance or thing that has harmful or poisonous effects.

Impervious: not allowing fluid to pass through.

Perennial: is a plant that lives more than two years.

Groundwater: water held underground in the soil or in pores and crevices in rock.

Background:

Stormwater pollution is one of the most significant water pollution problems today. Stormwater can contain an assortment of pollutants including; sediment, oil, grease, gasoline, lawn care chemicals, dust from tires and brakes, and bacteria from animal waste. These pollutants are very common in urban areas due to the larger amount of runoff than in more rural areas. Runoff is when stormwater travels across surfaces that are impervious to water. Surfaces such as roads, buildings, and any concert/asphalt do not allow water to travel through them.

Rain gardens can help collect stormwater runoff from roofs, driveways, or other impervious surfaces. Rain gardens collect the stormwater that would otherwise be rushing off into storm drains and to the local waterways. Essentially rain gardens are shallow depressions with perennial plants growing in them. The depression and plants will gradually absorb and filter stormwater. Rain gardens are can provide food and shelter for wildlife, and provide you a hardy, low maintenance, and naturally beautiful garden.
While this activity is more of a project RCP would like to encourage you to construct your own rain garden to improve water quality in your local watershed.

Let's Get Started:

1.) Choose your site. Rain gardens should be located at least 10 feet from a house or buildings. If you have an area in your yard that often collects water after heavy rain and has full sun it would be an ideal spot for a rain garden. Even though areas like these are ideal it isn't necessary for a great rain garden. Look for spots that receive at least half a day's worth of sunlight and it should have a natural slope this will lead water to the collection area, which will be your future rain garden. Also, an important thing to consider is where septic systems are located in the area. You should not dig too close to septic systems.

2.) Test your site. Now dig a small hole that is around 6 inches deep. Fill that hole with water and wait to see if the water drains out. If all the water is drained within a few hours then it's an excellent location. If the water drained within 24 hours, then it's an acceptable site. Now if the water doesn't drain in 48 to 72 hours, then you should find a different spot for your rain garden. This is because you need stormwater to be able to drain into the soil. If it drains too slowly then during heavy rains the stormwater will travel over your rain garden.

3.) Once you find a well-draining spot it's time to dig! Remove any grass/sod and dig approximately 6 inches deep. Save the grass/sod for a berm later on in this project. You can make our garden as big or small as you like. Typically residential rain gardens are 100 to 300 square feet but don't worry if you don't that much space smaller gardens can still do a lot of good. Slope the sides of your garden gradually from the outside edge to the center. Your garden should be shaped like a deep plate. Use the soil and grass/sod you removed to build up a slightly raised area on the lowest side of your rain garden. This will act as a berm and will help contain the stormwater and allow the water to slowly move through your rain garden. You will want to make sure that all of the sides of your garden are at the same level. That way it will reduce the likelihood of stormwater breaking toward one side of your garden.

4.) Direct any downspouts from your roof or sump pump outlets from your basement toward your garden if you can. Natural slopes can help direct stormwater to your garden as well as digging a shallow swale or by piping the runoff directly to your garden.

5.) Now your garden is almost ready for planting! The soil in your garden needs to be well-draining. The ideal soil for this project is; 20-25% leaf mulch or compost, 50% sandy soil, and topsoil 25-30%. If soil isn't ideal try adding sand, mulch, compost, and topsoil to the soil you removed when digging your hole.

6.) Now it's time to plant! Make sure to plant hardy perennials that can handle wet and dry conditions. Here some Ohio native perennials that would do great in a rain garden are Blueberries, Blazing Star, Brown Eyed Susan, Cup Plant, Mountain-laurel, Nannyberry, Ohio Spiderwort, Red Twig Dogwood, Shasta Daisy, Wild Geranium, Butterflyweed, Joe-Pye Weed, New England Aster, Purple Coneflower, Royal Catchfly, Shining Sumac, Smooth Aster, Swamp Milkweed, Sweet Black-Eyed Susan, and Wild Bergamot. In choosing native plants you will have less maintenance and it will attract more native and beneficial pollinators to your area. Use your now prepared soil to plant your garden. When planting makes sure the soil and plants are planted level to the ends of the rain garden. Mulching is a great option if you would like to reduce the likelihood of soil erosion in your garden.

7.) Water and keep an eye on your garden for the first few weeks. After that, the plants will be well established and should thrive without additional watering. Weeding will be needed after the first summer of growth. Winter maintenance is suggested for new plant growth. In late winter or early spring remove the dead plant materials by mowing or cutting them back with pruning shears.

Reflect:

What plants did you put in your rain garden?

What kind of wildlife does your garden attract?

Does your rain garden work well in heavy rain?

Apply:

Why do rain gardens help reduce runoff pollution?

Where does the stormwater go once it's in the rain garden?

Wrap Up:

In nature, rain falls directly onto vegetation and then it evenly distributed over the surface on the ground. Plants slow down the travel of stormwater which helps more water absorb into the ground to help replenish groundwater. They also decrease runoff that ends up in local streams, ponds, and rivers. In urban settings, as little as 15% of stormwater is absorbed in the soil and up to 55% will become runoff. Rain gardens can help increase groundwater reserves and actually help prevent flooding around houses and roads. Rain gardens can prevent runoff from picking up pollution that could harm local waterways and wildlife. It's estimated that 70% of the pollution in streams, rivers, and lakes is from stormwater runoff. With your help in constructing a rain garden, it will help reduce the negative impact of stormwater runoff pollution.

Thanks for exploring with us! If you would like to share your rain gardens with Raccoon Creek Partnership email us at: raccooncreekpartnership@gmail.com.
See you next time!