Gardening with the Rain

Rain is important for the landscape but large amounts of rainfall in a short period of time can lead to problems. Working with the environment is a key principle of permaculture. There are numerous ways to benefit from heavy downpours while minimizing the negative effects. Designing a landscape to accommodate these events is one strategy.

Bioswales are sunken landscapes engineered to allow rainwater to collect and slowly drain into the soil. There are similarities between bioswales and rain gardens, including plant selection, but bioswales are typically located near large paved areas and are used to move rainwater rather than just collect it. A drain is often included to release excess water.

In addition to the benefits of reducing erosion and flooding, bioswales create aesthetically pleasing greenspaces. Native plants are commonly used for these designs because they are acclimated to the climate and soil conditions of their environment. They can attract pollinators and provide a food source and habitat for wildlife. The deep roots of native plants filter pollutants and prevent harmful toxins from entering our streams.

Designing a bioswale is more than just digging a sunken landscape or planting natives in a ditch. The depth and overall size of the bioswale are calculated based on how much water accumulates in the area. The swale should be graded with the contours of the land to reduce erosion but also allow the excess water to drain towards the outlet of the swale. Bioswale designs are not usually recommended for land that is flat or very steep.

The soil in a bioswale must drain well otherwise it will need to be amended and/or a drainage system underneath may be necessary.

Minimal maintenance is required to keep the bioswale functioning properly. During the establishment year it is important to regularly monitor the landscape. Check for plants that are struggling and replace them as needed. Also identify areas that aren’t draining properly. After the
Permaculture

first year, tasks such as pruning plants and removing debris/sediment may be necessary on occasion.

Unmanaged stormwater is an environmental hazard because it can collect pollutants from the roadways and sidewalks and transport them into our waterways. Bioswales are a great tool for protecting the land and water while also providing a beautiful landscape. The Environmental Protection Agency (EPA) has a resource to help property owners determine if a bioswale is an option for their landscape. Though focused on swales planted with grass, the recommendations can be applied to native plantings as well.

Stormwater Best Management Practices: Grass Swales (EPA)

Do you have an innovative rain gardening practice?

Share your stories of gardening with the rain! Email Cynthia at cdom@ksu.edu if you have a garden story to tell.

Cynthia Domenghini, Horticulture Extension Specialist

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

K-State Research and Extension is an equal opportunity provider and employer.