

Minimizing Soil Erosion for a Healthier Garden

As the weather warms and the unofficial planting and gardening season begins, it is important to be cognizant of potential garden issues, such as soil erosion, that can wreak havoc on your residential landscape and negatively affect the health of your garden. Unfortunately, the common problem of soil erosion can be the one thing keeping your plants from the healthy garden soil they need to thrive. So what can you do to minimize soil erosion? First, it is helpful to understand what soil erosion is before taking the steps to minimize this all too frequent natural occurrence.

What is soil erosion?

Soil erosion is the displacement of the upper level of soil caused by a variety of erosive forces: water, wind, ice, snow, animals, farming practices (i.e. tillage), etc. The extent of soil erosion is directly affected by several factors including; the type of soil, how much cover is holding the soil, the amount of irrigation and/or rainfall the soil receives, and how sloped the garden and surrounding area is.

Specifically, soils containing large amounts of clay hold more water and have the potential to erode faster, while heavily amended organic or sandy-loam soils drain better and are more resistant to erosion. The first step in managing erosion is to identify places where it has the potential to occur. Pay attention to natural slopes, hillsides, paths of water after it rains, and areas you are actively watering. If you notice exposed roots, tunnels, puddles, or mud, these are indications of soil erosion in your garden. Once you have identified areas susceptible to erosion, you can begin to address the issue utilizing the two basics principles of soil erosion control: soil stabilization and targeted watering.



Soil Stabilization Techniques

Some of the easiest ways to provide soil stabilization in your garden include mulching, overseeding and strategically incorporating native plants into the landscape. When mulching your garden choose locally sourced material whenever feasible and avoid using rock or pine

needles in food gardens. Soil should be covered by 1-2 inches of mulch to protect from overwatering which in turn may lead to soil erosion. Adding organic matter in the form of compost, good topsoil or composted manure loosens up hard ground and allows plant root systems to spread out and stabilize the soil.

Overseeding and planting ground cover in your garden are two techniques that promote root density, which holds water and soil in place; ultimately, decreasing soil erosion. Overseeding is a technique that is accomplished by adding extra seed to your lawn or by leaving grass clippings in place after mowing. Overseeding not only creates a thicker lawn able to effectively reduce run-off and soil erosion; it also improves your lawn's health by allowing it to retain more moisture and nutrients.

Much like overseeding, preventing erosion with native ground cover plants is a common landscape management practice. Examples of native ground cover include; phlox, sedge, foam flower and certain types of ferns (visit University of Maryland's ground cover list at <https://extension.umd.edu/hgic/topics/groundcover-list> for specific species). Native grasses are also useful for erosion control, are generally low maintenance, and have the added benefit of being easily transplantable. Overall, some great choices for the region are: switchgrass, prairie dropseed and blue fescue (for a comprehensive list visit University of Maryland's Ornamental and Native Grasses list at <https://extension.umd.edu/hgic/ornamental-and-native-grasses-landscape>).



Another effective soil stabilization solution is to control the flow of water as it moves downhill, utilizing it to water a low-lying area such as a rain garden. A rain garden consists of water loving plants found in the region and often employs stones and large rocks to direct the water into the garden. A well-positioned rain garden has the potential to not only minimize erosion, but also decrease the possibility of pollutants reaching nearby tributaries by over 30%!

Targeted Watering

Where and how you water is a critical aspect in reducing garden soil erosion. While rainfall and snowmelt is inevitable, we can control supplementary watering of our garden, often referred to as targeted watering. Excessive moisture exacerbates erosion; however, targeted watering can add to the health of the landscape. Targeted watering includes determining what garden features



need water in addition to rainfall and targeting only these locations with supplementary water. Overhead sprinklers and hoses tend to put out a large volume of water and cover both target and non-target areas in the garden. Consider using soaker hoses or drip irrigation to conserve moisture and prevent excessive buildup of water in the soil.

How can I prevent erosion in my own garden?

When choosing a garden site, it is best to utilize an area that is as naturally level as possible. As little as a two percent (2%) grade can cause soil erosion and as a result, a loss of nutrients to your plants. Other prevention strategies include:

- Add native plants. Their deep roots will stabilize the soil and soak up water.
- Planting on a contour or creating small, bedded terraces.
- Maintaining some type of cover crop/ground cover of native plants in the garden at all times.
- Avoiding over-tilling/digging in the garden as this can potentially increase the risk of soil erosion.
- Choosing organic mulches, such as pine straw, wheat straw or partially formed compost when mulching. These options provide moisture control as well as weed protection.
- Improving garden soil by adding organic matter. Try adding a 4-inch layer of organic matter to clay based soils to increase water infiltration.

When you make just a little bit of time and effort to protect soil and manage erosion in your yard, the returns are noticeable and beneficial. Not only will soil stay where you want it, but you'll use less water, your landscape/garden will maintain its aesthetic, and plants will flourish as intended.

Visit the following websites for more information on erosion control as it relates to residential gardening/landscaping:

<https://gilmour.com/preventing-managing-yard-soil-erosion>

<https://www.gardeningknowhow.com/plant-problems/environmental/plants-for-erosion-control.htm>

<https://extension.umd.edu/hgic/topics/groundcover-list>

<https://extension.umd.edu/hgic/ornamental-and-native-grasses-landscape>

<https://www.epa.gov/watersense/what-plant>

<https://www.epa.gov/watersense/watering-tips>

Please visit <https://code200-external.gsfc.nasa.gov/250/environmental/environmental-bulletins> to explore other topics of environmental importance.

