

Mutual Aid Disaster Relief - Disturbance-Based Ecological Remediation

Rain Garden

Purpose:

Rain gardens mitigate flooding impacts and reestablish native ecologies, all while requiring relatively little work from humans. The installation process is the most human-intensive, but the garden should be mostly autonomous unless drought or freeze should strike. Rain gardens function to clean groundwater, divert chemicals from collecting in streams and water systems, diminish the effects of erosion, and improve the health of the entire ecosystem.

Methods:

Before installation, select the best installation zones. These zones are low-lying areas that tend to flood or encounter rushing water. Generally, the resident will know which areas flood the most, but look for places that are lower than the rest of the land. Installing rain gardens near a road can reduce water retention to the side. Rain gardens should not be closer than 10 feet to any structure and should not interrupt septic or electrical systems.

In order to collect and absorb floodwater, rain gardens must be 4-8 inches lower than the lawn surface around the garden. Rain gardens are most effective when they function as barriers to floodwaters, meaning the installation zone should be in front of an area needing protection.

Remove the top layer of sod from the installation area by breaking up the area with a shovel, ensuring oxygen reaches the soil. Depending on the quality of the sod (no signs of fungal growth, few rocks, etc.) what you remove may be usable in another area of the landscape, like a vegetable garden.

With the shovel, break up the lowest layer of the garden soil gently to make mixing in compost easier. Spread compost evenly to the freshly uncovered ground for the best effects on the transplants. This will feed them many of the nutrients they need. For clayey soils, you can mix sand into the compost and ground soil to make drainage possible (this will keep the plants from suffocating while in standing water.)

The plants in the rain garden must be native to the area because they can withstand the local conditions best. While flowers and smaller grasses are beneficial and aesthetically-pleasing, do not forget shrubs and trees because their roots can absorb more water.

Mulching the garden can be helpful at first, as “weeds” can initially slow plant growth by taking up available nutrients. As time goes on, the resident may find that new growth continues to slow water. These so-called “weeds” can actually root down and strengthen the garden, despite looking a little messy. If aesthetics are a bigger concern, one can reapply mulch and weed the garden as they want.

While it may seem counterintuitive to water a rain garden, this step is necessary when first established. New transplants require watering until they take root. The garden will begin to take root and become self-sustaining, making the space more accessible and safer during heavy rains and floods.

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Materials:

- Shovels
- Compost
- Hose, access to water for watering plants in
- Transplants (needs a defined root structure; must be native to the area for best results)