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## How Plants and Mulch Prevent Erosion

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Erosion can be a problem in any landscape even if there isn't much slope. Of the various types of erosion, let's look at how the flow of water over or through the soil can cause erosion.

Much to my dismay, it has become popular to orchestrate landscapes that are largely beds with a smattering of plants and expanses of bare soil or mulch. In my consulting practice, I see way more bare soil than high-carbon (woody) mulch applied at an appropriate depth (2-4" is a good start).



*Roots!*

I constantly tell people, if they can't do anything else in their quest to be kinder to the ecosystem, they should apply a thick layer of high-carbon mulch like dried leaves, arborist chips or fresh bark mulch.

But as good as mulch is at preventing erosion, it isn't as good as a dense planting of live plants.

The video below shows how much cleaner the water overflow is for planted-soil compared to soil without plants or mulch.

### Erosion and Soil



A little bit, I take issue with the 'soil' used for the experiment. It appears to be potting soil. That stuff is not the same as soil out in the environment. It is specially blended to be very light in texture. Also note that, in the experiment, the soil appeared to be very dry. Such dryness might cause more soil 'erosion' than would happen if the soil were not dried out. But consider that in our region, dry soil is the norm in the summertime. And a bitter reality in urban and suburban areas is that the soils have been so man-handled in the process of creating residential and commercial areas, that it leaves the soil with exceedingly poor structure and porosity. This adds to erosion issues.

I think mulch on the soil's surface serves to slow down the water's flow before it actually makes contact with the soil. It also could be that the mulch has kept the soil a bit more moist in the first place, causing it to absorb moisture better than dry, bare soil might.

And obviously, as you watch the whole video, you can see how plant roots do a fabulous job of holding soil in place. The demonstration, using grass, is fine, but in real life, we generally recommend that a landscape have plants with roots of a wide variety of depths, particularly on slopes. And if you must have grass on slopes, let them grow longer than that of a typical lawn. This is because the amount of roots grass grows is directly proportional to the top growth.

When you are working at creating a landscape, be it for habitat and wildlife or for your own enjoyment of the colors and textures of nature, try to cover the earth completely with living plants. Mother Nature hates a void! Plant some tall things, some medium height things, and some very short things all having a range of rooting depths.

That sort of landscaping makes for a more visually interesting garden, it will be more attractive to birds, pollinators, and other wildlife, and it will prevent a lot of erosion. On steeper slopes, terracing is still the most effective way to avoid erosion, but if that is not financially possible for your situation, dense planting as described above is recommended.

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