

## MULCH – A Short Primer

In the “original” natural systems of prairies and forests, what we would refer to as mulch is the accumulation of system litter – grass and plant stems, leaves and sticks, etc. The slow breakdown and eventual decay of this material is an essential part of these ecosystems and is crucial to their health and continued existence. This decaying material provides shelter and food not only for plants but also for myriads of other soil creatures all along the cycle of life.

Mulch, in its many different forms, in our gardens performs similar functions to that of the decaying litter. Mulch serves to insulate the soil against rapid temperature changes and can keep the soil surface 10 degrees cooler in the summer’s blazing heat. Mulch also serves as a blanket in the winter protecting the soil and plants from temperature extremes and the rigors of the freeze thaw cycle in the spring. Mulch also helps water penetrate the soil, helps conserve moisture in the soil, prevents erosion, and prevents desiccation and desertification from the wind.

Gardens are an arrangement of plants of both of the prairie and forest systems arranged in a manner to suit a given set of aesthetics that are not necessarily organized (even with the best intentions) to take into account the conditions optimal for plant health. Our current cultural aesthetics require that gardens, grass (prairie) and shrub (forest) borders have a certain look with well defined separation and edges. To this end, all garden beds are mulched and all lawns are kept closely manicured. Tailoring your “Tidy Aesthetics” to only the most visible, highly trafficked areas of your property can free up your landscape budget for projects elsewhere. Current practice encourages us to use mowers (large, wide ride on or self propelled types), weed whackers and blowers (bigger and louder are best here).

All of this machinery generates a lot of air movement and wind which intentionally or not blows all of the litter around and takes it out of the “natural” cycle of production. Weed whackers (used for edging), which cut off just the tops and not the roots of the grass (in its relentless movement into the beds) frequently damage the garden plants and shrubs that are at the edge of the bed. Weed whacked edges do not create good edges and don’t eliminate the grass roots from entering the beds like traditional edging does.

Blowers and lawn mowers, all blow mulch or litter out of the beds, or farther into it, creating a bare edge and a beltway mound of mulch 8” – 24” which is too deep. The heat and gale force winds (anywhere from 125 – 183 MPH according to two different manufacturer’s specs) created by blowers, in particular, routinely cause damage to any and all of the plants that they come into contact with. Walking on the plants breaks, damages and eventually causes branch and plant death in addition to unnecessarily compacting the soil.

So each year, as current cultural practice and norms dictate, beds are blown out in the Spring, and mulch is applied. Over the course of the season, between the mowers, whackers and blowers, the mulch is blown anywhere from 12” – 24” off of the edges of the beds. Any of the plants at the edges of the beds have lost any of the benefits of the mulch and at the end of the season, most, if not all of the mulch is blown out of the beds, depriving the soil and the plants of its winter insulation, just in time for the winter season and the spring freeze/thaw cycles.

Mulch, and bark mulch in particular, is optimally applied at a rate of 4” inches, every two years. Any more mulch and the plants, shrubs and trees will get stressed out from the effects of suffocation. Plant roots and healthy soil MUST have air to survive. If the soil and roots are buried too deeply, then chemical reactions occur in the soil and these reactions are not favorable for root growth. In fact this can cause root dieback, which places additional stress on the plants and the soil biology that has a symbiotic relationship with the plants. All plants form some type of symbiotic relationship with soil biology that helps them get the benefit from soil nutrients, minerals and water. Other types of mulches include materials like leaves, pine needles, hay, grass, and shavings must follow some of the same rules of application. Fresh manure should NOT be applied to any beds as it will cause burning of plant material from the sudden overload of nitrogen.

Mulch must NOT be applied so that it has direct contact with the bark of trees or shrubs. This will accelerate plant decline by rotting the protective bark, and causing the plant to send out suckers and roots from the trunk as stress response mechanisms. All trees and some shrubs have trunk flares which you can see in natural forest systems, (except where humans are dumping extra leaves, grass or branches into.). These are necessary for anchoring and also the trees ability to withstand high winds. Mulch “volcanoes” are to trees like “wet socks” are to humans – wet, nasty, itchy and ripe conditions for fungi and bacteria to grow! They also provide nice homes for rodents which chew on the bark, which girdles (kills) the trees.

Mulches may not need to be applied as thickly especially in areas where there are lots of groundcovers becoming established. Lighter compositions or somewhat broken down mulches (crunched leaves, pine needles etc.), work well in situations such as these. In areas where there are established groundcovers some of the leaves can be left to decay naturally on their own – especially if they are smaller leaves from ash, cherry, apple etc. Larger leaves from areas with lots of maples and oaks may have to have some of the leaves removed or mowed to a smaller size.

Weed and or seed suppressors, (used with care as some of them are made up of fairly serious herbicide combinations that should not be overused) can be effective maintenance tools to alleviate long-term maintenance and to allow groundcovers a chance to establish themselves without competition from weeds. Well established, thickly growing groundcovers do many of the same jobs that mulch or litters do on the prairie or forest floor. In addition they provide the added element of plant competition so that weeds that do happen to sprout never get a foothold like they do in highly disturbed areas with no mulch cover.

While there is no such thing as “No Maintenance”, planting what you want and ensuring good coverage with trees, shrubs, perennials and groundcovers that will keep the ground shaded greatly reduces the number of weed seeds that will be able to germinate and or successfully flower and go to seed. This type of planting is referred to as a “Living Mulch” and can be applied to all types of planting styles and cultural conditions. The seeds are always there but if you can control some of the conditions that they require for growth, they won’t sprout and/or grow successfully. Shifting your “Tidy Aesthetics” to only those public and highly trafficked areas as well as managing the mulch and mowing practices on your property will save you money in the long run.

**Designer of Greens** is a member of the Ecological Landscaping Association as well as an active member of the New England Wildflower Society and the North American Rock Garden Society. We are an accredited, organic landcare company as well as licensed pest applicator in the state of MA (required by law to apply materials to another’s property.)