

Lawns and Soil Health

There are an estimated 40 million acres of lawn in the continental US. A beautiful, lush, green lawn is the perfect setting for recreation and entertaining - and can be home to abundant life. Lawn managers have a responsibility to all of the biological workers of the earth to help regenerate ecosystems by caring for the soil and vegetation that, together, constitute a lawn. Healthy soils create healthy lawns.

Soil Health Principles:	Applied to Lawns:
Surface Cover (no bare soil)	Grow a variety of grasses that thrive throughout the year. Leaving soil exposed without vegetative cover can increase the temperature of an area and stress the life around it. Bare soil can be the result of compacted soils. Limit driving and repeated walking over the same spot, especially in the spring. Put out some obstacles for a time. Dead spots can have holes punched in them and compost raked in. Power machines can be rented. A flat fork can be repeatedly forced in and rocked and reinserted a couple of inches away.
Living Roots in the Ground	Grass roots at different depths and architectures help hold soil in place, reduce erosion, and feed organisms underground.
Maximized Diversity	No more monocrops! Encourage diversity! Choose seed mixes to spread on your lawn that are diverse in lifecycle, shape, root depth, and are realistic for the region that you live in.
Minimized Disturbance	Disturbances like repeatedly digging into soil, tilling, and applying biocides or synthetic fertilizers disrupts natural cycles and structures. Synthetic fertilizers can provide an artificial supply of nutrients, sometimes in forms unavailable to plants, that destroy soil life's ability to cycle nutrients on their own. Consider using manual removal or control by mowing practices to address unwanted plant populations (i.e. weeds).
Integrate Animals (any and all)	Biocides (herbicides, insecticides, and fungicides) kill biological workers that create goos, glues, snots, and slimes that hold soil together. Attract beneficial insects and microbes by planting diverse species and applying biological mixes of inoculants (teas) and regular light top-dressings of compost to feed soil life. Integrating animals means humans too - get your hands in the soil!
Slow and Sink Water	Incorporate areas where rain can slow down and infiltrate after it comes off of impervious surfaces (like roofs and driveways). Increased infiltration into the soil can supply more water during dry periods. It can also reduce runoff and erosion. Practices to encourage infiltration include rain gardens, vegetated infiltration strips, and, more broadly, areas of healthy soil.

Once you've jump-started your lawn back onto the path towards regeneration, you can trust that natural processes will continue to provide you with a beautiful, resilient lawn!

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To jump-start your lawn, consider these practices:

Dethatch

You may need to dethatch your lawn if it is not biologically active. Thatch is the dense accumulation of dead roots, stems and partially decayed organic matter at the base of the grass. Dethatching can be accomplished by raking to scarify the organic material or using a power dethatching tool. Dethatching will help with the germination rate of new seeds that you'll apply later.

Aerate

Core aeration of hard, compact soils will help amendments such as compost and inoculants get deeper into the soil.

Inoculate/Amend

Soils require nutrients and life to cycle those nutrients. Composts, other organic amendments, and liquids inoculated with soil life (compost teas/extracts) can help rebuild populations in the soil. Caution: quality of amendment matters! You're looking to diversify soil organisms to include more than a few species of bacteria and pathogenic fungi. Proper biologically active compost will have bacteria, nematodes, protozoa, fungal hyphae, and will be suitable for earthworms and microarthropods to take up residence.

Spread diverse seed

Incorporating diverse seed mixes with species that vary in lifecycle, shape, root depth, and are realistic for the region that you live in can help create the conditions for future healthy, diverse, and lush lawns. It is best to apply seed in the fall and spring to out-compete other vegetation. Make sure that seed mixes have legumes, like clover, in them to help naturally add nitrogen to the entire lawn.

Mow Less / Not at All

Mowing a lawn brings machinery onto your soil which can lead to compaction and reduced infiltration. Mow your lawn at 4 inches or higher to encourage a stronger root system that captures rainfall more efficiently and avoid killing life that lives near the soil surface. Follow the $\frac{1}{3}$ rule which means to cut only the top $\frac{1}{3}$ of the grass blade to protect the base of the grass blade from drying out. Leave the grass clippings which serve as a natural, free fertilizer. Longer, more robust grass shades out weeds and provides a natural means of physically trapping pollutants and sediment in rainwater. Go even further and try an area of no-mow; see how your lawn adapts.

Go Big by Going Small

Provide conditions for even more biodiversity by shrinking your lawn area and transitioning available areas to more diverse habitat with vegetation of different types: trees, shrubs, and flowering plants, etc. Or transition it to an area for growing your own food using agro-ecological principles and practices.

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