

Turf Grass Madness: Reasons to Reduce the Lawn in Your Landscape

Across the United States, it is estimated that turf grass lawns cover 62,500 square miles of ground—more than 31 times the size of Delaware! Most lawns are simply too big to be useful, with high maintenance costs, minimal wildlife value, low aesthetic interest, and negative environmental impact. Though our obsession with immaculate expanses of grass has been long in the making, it is not too late to change.

Why are there so many turf grass lawns?

Some people speculate that the American infatuation with mowed lawns stems back to our ancestral beginnings in the savannahs of Africa, where lower grass provided open sight lines to lurking predators. More recently, in the eighteenth century, close-cut lawns became a symbol of wealth in Europe, a practice that made its way across the Atlantic by the 1800s. Not only did rich landowners have the hired help required to maintain the lawn before the advent of power tools, but they had the luxury of dedicating a parcel of their land—often tamed at great expense—to something as frivolous as a non-food crop.

Lawns really became all the rage in the 1950s, when the post-World War II American Dream of a owning a house in the suburbs melded with widespread availability of power mowers, improvements in turf grass varieties, and the advent of effective pesticides, herbicides and fertilizers. No longer a status symbol of the rich and famous, front lawns became the measure of a middle-class family's ability to keep up with the Joneses.

Today, lawns are undeniably the norm, blanketing the vast majority of suburban and rural home landscapes as well as commercial and government properties. Heralded for their ability to take foot traffic, they are fundamental to play areas, sports fields, and golf courses – as well as the lawn care industry, on which Americans spend \$30 billion dollars a year. A large, uniform, well-kept lawn has become the mark to which many homeowners aspire, without regard for the economic and environmental implications of maintaining such an extensive exotic monoculture.

So, what is the problem with having so many turf grass lawns?

- **High maintenance requirements.** Frequent and often costly maintenance is needed to keep turf grass looking its best. During peak growing months, a single lawn may

require mowing more than once a week. During periods of drought, irrigation may be required to keep a lawn from going dormant. Yearly fertilizer is usually recommended for encouraging lush growth.

- **High pollution outputs with public health risks.** To stay healthy and productive, lawns require inputs that damage our environment and health. Until recently, lawn mowers have been excluded from EPA regulations regarding emissions standards, and subsequently the average riding mower emits the same amount of pollution in one hour as 11 new cars or 34 older cars. Gas-powered garden tools in general account for a whopping 5% of total air pollution in the United States.

Water pollution is also a problem because chemicals used to treat lawns run off in rainstorms, flowing into storm drains and eventually into our natural water bodies. Runoff spiked with fertilizers causes algae blooms, which causes aquatic plants and animals to suffer and perish from low oxygen and lack of sunlight. Depleted water bodies rob humans of important ecosystem services such as water filtration. Lawn chemicals may also present direct health risks humans: In a 1987 study by the National Cancer Institute, children living in homes where lawn pesticides were commonly used were 6.5 times more likely to develop leukemia.

- **High water requirements.** Water conservation efforts are hampered by our collective insistence on maintaining large tracts of perfectly lush turf grass. Across the United States, over 7.9 billion gallons of water are used on landscapes each day, primarily on lawns—and most often this water is fresh and potable. Our collective practice of irrigating so much turf combined with billions of impervious surfaces that cause water to run off into streams instead of recharging the water table are major contributing factors to historically low groundwater levels across much of the country, especially in the west. A NASA scientist has estimated that if all lawns across the country were sufficiently irrigated, it would require 200 gallons per person per day. Though in Delaware supplemental irrigation is not required to keep turf grass alive, it is often required to keep turf grass from going dormant during periods of summer drought.
- **Low wildlife value.** Turf grasses—exotic plants that evolved largely in Europe and Asia—provide little support for native biodiversity in North America. All plants have distasteful chemicals that prevent them from being eaten, except by a selection of creatures that evolved alongside them and over time developed tolerance for specific chemicals produced by specific types of plants. Because turf grass did not exist in North America before humans brought it here, the vast majority of North American insects have not evolved the ability to eat it. In sum, a lawn will not support many native insects. In the absence of healthy insect populations to feed on, the vast majority of other local wildlife—birds, bats, land mammals, frogs, toads, turtles, lizards, spiders and a myriad of other critters—literally cannot survive. The huge expanses of lawn cultivated across the United States thus represent a largely sterile environment, unable to support biodiversity that provides us with essential ecosystem services. (For more information about sustaining wildlife in backyard landscapes, consult the fact sheet “Supporting

Biodiversity in the Garden," available at <http://www.ag.udel.edu/udbg/sl/vegetation.html>)

- **Inappropriate placement.** Turf grass is simply a poor choice for many areas of the landscape where we try to force it to become established. Turf requires full sun to grow its best, and it does poorly under trees where it competes not only for light but also for water. It is impractical to install against the foundation of buildings and on slopes where mowing is difficult and dangerous.
- **Does not take advantage of opportunities for a varied, diverse, landscape with year-long interest.** Simply put, lawns are boring when compared to many other plant communities. The typical landscape's wide swath of green (broken only by a few non-descript shrubs plastered against the foundation) provides little aesthetic interest throughout the changing seasons. Turf grass is classified as either cool season—growing in spring and fall and turning brown in summer—or warm season, going dormant in all but the hottest months. It does not bloom, it does not attract butterflies, it has no fall color (except, perhaps, brown). There are plenty of plants that can provide these qualities while requiring less maintenance than open lawn.

Okay, I'm convinced I have an unhealthy addiction to my turf grass lawn. How can I change?

- Consider reducing the size of your lawn and use it strictly for structural and functional purposes, such as defining the shape of outdoor rooms, as wide pathways between planting beds, or as a designated play area. (For more information about landscape design, consult the fact sheet "Designing a Sustainable Landscape to Serve Your Needs," available at <http://www.ag.udel.edu/udbg/sl/vegetation.html>)
- Use groundcovers. Low-growing, low-maintenance groundcovers offer a great alternative to turf grass, especially in hard-to-grow or hard-to-mow areas. (For more information, consult the fact sheet "Groundcover Alternatives to Turf Grass," available at <http://www.ag.udel.edu/udbg/sl/vegetation.html>)
- Employ a wide variety of low-maintenance trees, shrubs, and perennials to create garden spaces with year-round interest. For one example, consult "Can You Live Without Lawn?", an explanation of the homeowner-inspiring landscape at the University of Delaware Botanic Gardens' South Greenhouse Garden (available at <http://ag.udel.edu/udbg/gardens/southgreenhouse.html>)
- On the lawn you do maintain, care for it wisely to reduce needless impact on the environment as well as your wallet. For more information, consult the University of Delaware Cooperative Extension's "Lawn" page (<http://ag.udel.edu/extension/horticulture/lawn.htm>) or any of the fact sheets listed below. Following are suggestions for more sustainable lawn maintenance:

Sustainable Landscapes – <http://www.ag.udel.edu/udbg/sl> – <http://ag.udel.edu/extension>

- Select the type of turf grass that will do best in your given climate, light and soil conditions. (For more information about varieties that do well in Delaware, consult the fact sheet "Turfgrass Selection for Delaware," available at <http://ag.udel.edu/extension/horticulture/lawn.htm>)
- Recycle leaves that fall on your lawn to incorporate their nutrients into the soil. (For more information, consult the fact sheet "Recycling Leaves," available at <http://ag.udel.edu/udbg/sl/materials.html>)
- Practice responsible fertilizing that reduces pollution of stormwater. (For more information, consult the fact sheet "Fertilizer Basics," available at <http://ag.udel.edu/extension/horticulture/>)
- Limit the use of gas-powered tools, or the size of the gas powered tools you do use. Consider using a mechanical push mower, especially in smaller areas.
- Mow turf grass only when it is dry, and only with sharp blades. Cut no more than a 1/3 of the grass blade, aiming for a height of 3 inches for a healthy carpet of lawn.
- Use a core aerator to loosen compacted soil and manage thatch buildup. (For more information, consult the fact sheet "Combating Soil Compaction," available at <http://ag.udel.edu/udbg/sl/soils.html>)
- Employ Integrated Pest Management to monitor and control pests and diseases. (For more information, consult the fact sheet "IPM for Homeowners," available at <http://ag.udel.edu/extension/horticulture/ornamentals.htm>)
- Manage your lawn with the goal of water conservation. (For more information, consult the fact sheet "Lawn Management for Water Conservation," available at <http://ag.udel.edu/extension/horticulture/lawn.htm>)

Additional Resources

Aerating Your Lawn

<http://www.ext.vt.edu/pubs/turf/430-002/430-002.html>

American Green: The Obsessive Quest for the Perfect Lawn by Ted Steinberg (W.W. Norton, 2007)

Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens by Douglass W. Tallamy (Timber Press, 2007)

The Landscaping Revolution: Garden with Mother Nature, Not against Her by A and S. Wasowski (Contemporary Books, 2000)

University of Delaware Cooperative Extension's Lawn page
<http://ag.udel.edu/extension/horticulture/lawn.htm>

The Lawn: A History of an American Obsession by Virginia Scott Jenkins (Smithsonian, 1994)

Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are by Paul Robbins (Temple University Press, 2007)

Looking for Lawns
<http://earthobservatory.nasa.gov/Features/Lawn/>

Bibliography

Eilperin, Juliet. (2008). Emissions Standards Tightened: EPA Sets New Limits for Lawn Equipment, Boat Motors. *The Washington Post*. September 5, 2008, pp. A04. Retrieved November 17, 2008 from <http://www.washingtonpost.com/wp-dyn/content/article/2008/09/04/AR2008090403373.html>.

Delaware.gov. (2008) . Delaware Geography. Retrieved December 1, 2008 from <http://portal.delaware.gov/delfacts/geo.shtml>.

Jenkins, V. S. (1994). *The Lawn: A History of an American Obsession*. Washington and London: Smithsonian Institute Press.

Lindsay, Rebecca. (2005) Feature Article: Looking for Lawns. *NASA Earth Observatory*. November 8, 2005. Retrieved November 17, 2008 from <http://earthobservatory.nasa.gov/Features/Lawn/>

Robbins, Paul. (2007). *Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are*. Philadelphia: Temple University Press.

Tallamy, Douglas W. (2008) *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens*. Portland, OR: Timber Press.

Wasowski, A. and S. Wasowski. (2002). *The Landscaping Revolution: Garden with Mother Nature, Not against Her*. New York: McGraw-Hill/The Contemporary Gardener.