

THE LAWN GOODBYE ?

Recent satellite photographs have shown that lawns (residential and commercial sites, golf courses, etc.) now occupy 45.6 million acres (which is 3 times the size of New Jersey) or 23% of urbanized land. This makes the American lawn the largest irrigated crop in the United States in terms of surface area, taking up more space than corn.

Maintaining the lawns in this country requires vast amounts of water. Lawn irrigation on the east coast of the United States accounts for 30% of water use; on the west coast water used for irrigation is 60% of available water. The turf grasses that are most commonly used in this country are very shallow-rooted; therefore, the soil is not opened up and rainwater has no place to go, but to run off, and is thus lost to the system.

According to the National Audubon Society an estimated 70 million pounds of pesticides are applied to lawns each year. This amount is ten times more per acre than is applied to agricultural crops. When it rains these toxic chemicals are carried away from the lawn and end up in our streams and waterways where fish and other aquatic life are at risk of mortality or morbidity. According to the Environmental Protection Agency, 40-60% of fertilizer applied to lawns ends up in surface and groundwater, contaminating them with excess nutrients. These excess nutrients lead to algal blooms, low dissolved oxygen, and impaired ecological health in our rivers, lakes, ponds, and coastal waters. Moreover, lawn fertilizers give off nitrous oxide - a greenhouse gas 300 times more potent than carbon dioxide.

Lawn mowers, and all of the other accoutrements of lawn care: weed whackers, edgers, and leaf blowers, etc., are usually made with two-stroke engines, which are notoriously energy-inefficient. Aaron Hoover, of the University of Florida, has estimated that one gas mower produces more air pollution than 43 new cars driving 12,000 miles each. Hoover also estimates that Americans use 800 billion gallons of gasoline every year in lawn maintenance activities.

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Historical Roots

European-style lawns began to take root in America in the mid-1800s after Andrew Jackson Downing recommended expanses of "grass mown into a softness like velvet" as part of a popular gardening treatise he published in 1841. His ideas were later incorporated into the broad lawns of New York's Central Park and lush, pre-automobile suburbs like Riverside, Illinois, which were aped in subsequent decades by the developers of less exclusive suburbs.

"No single feature of a suburban residential community contributes as much to the charm and beauty of the individual home and the locality as well-kept lawns," declared Abraham Levitt, whose name would become synonymous with the post-war explosion of inexpensive, mass-produced suburbs. In post-war America, lawns became a standard feature of the single-family home.



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THE CHANGING LANDSCAPE

Cincinnati's "Weed" Ordinance

On June 11, 2011, Cincinnati City Council adopted revisions to the Weed Ordinance that allow for managed natural landscaping. The code formerly defined noxious weeds as any and all grass, weeds and wild plants over 10 inches—which included a lot of desirable plants. According to the City's Planning Commission, the Weed Ordinance was an example of how well-intentioned codes can sometimes keep us from "doing the right thing" environmentally. One small ordinance, the Weed Ordinance, was used to cite neglected properties but also to cite property owners who were trying to cultivate a diverse yard, not a monoculture of grass. The Commission went on to clarify: 'A diverse yard, which is naturally landscaped, does not mean "don't mow your grass," but rather allows residents and businesses to incorporate their yard as part of nature. Yards are a good place where people can demonstrate their interest and participation in the web of life by cultivating native plants, butterfly gardens, vegetable gardens, rain gardens and low maintenance native groundcovers. A manicured lawn uses lots of fossil fuel to mow and often toxic chemicals to keep out anything but grass. A managed natural landscape does not require as much mowing or any toxic chemicals, can be more drought tolerant, and attracts birds and butterflies. Cincinnati can be proud to join other municipalities in updating codes that allow for and sometimes even promote environmentally friendly practices.'

Minneapolis' Managed Natural Landscape Ordinance

Prairie plantings, whether native or not, have a number of real advantages over standard turf grass lawns. They have deeper roots, which means they more effectively wick storm water into the ground, helping the City's goal of decreasing storm water quantity and improving storm water quality. They typically require fewer artificial inputs, such as pesticide, fertilizer, and the energy required to mow. They sequester more atmospheric carbon, and create more biodiversity and habitat for beneficial species like monarch butterflies.

Seaside, Florida

Turf grass is banned in Seaside, Florida; only locally native species of wildflowers, shrubs, and trees are allowed in the landscaping of private yards. The result has been verdant neighborhoods of shrub-scrub dune vegetation, with its related birds and wildlife—and the residents love it. "In most of America, however, the mowed lawn is still the norm, and weed laws are used to ensure conformity with this ideal." - PSU Extension



"Native plant gardens use half the water that a lawn does. They're also beautiful, and they provide habitat for wildlife. People who are interested in saving money on their water bill, eliminating pesticide use, and enjoying nature right outside their home are moving toward this newer and, I think, more interesting, type of garden." - Kathy Kramer, East Bay's Bringing Back the Natives Garden Tour

Sources: PSU Extension, Lady Bird Johnson Wildflower Center, Ecosystem Gardening, Dallas Observer, SFGate.com, USA EPA, City of Cincinnati, City of Minneapolis

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PSU Extension's Native Landscape Myth Busters

Myth: Meadows and natural landscapes are fire hazards.

Facts: This argument is based on the unproven belief that the tall grass and wildflower stems in a meadow are highly flammable. U.S. Forest Service experts state that a grass fire can only sustain high heat for 20 seconds. For a fire to be potentially damaging to a home, it must burn within four feet of the home for seven and a half minutes.

Myth: Natural landscapes attract vermin.

Facts: The most feared "vermin" are rats and snakes. The vegetation in a natural landscape does not provide the type or quantity of food required to sustain a population of rats. These non-native rats do not eat the seeds of our native grasses and flowers. Rats are more likely attracted to human-produced food (corn, grain, pet foods, food scraps) provided in and near structures like barns or garbage dumps. A neglected lot with human-deposited food litter among the untended growth is indeed a rat magnet, but the managed natural landscape is not. Snakes may find a hospitable habitat in either a traditional or a naturally landscaped yard if prey species, water sources, sunny areas for basking, and shelter are present. They are valuable neighbors because they eat true pests, such as mice, harmful insects, and slugs. Only 3 of Pennsylvania's 22 snake species are poisonous (Northern copperhead, timber rattler, and the endangered Eastern massasauga).

Myth: Natural landscapes harbor Lyme-disease ticks.

Facts: Deer ticks (*Ixodes dammini*), the primary vectors for Lyme disease, can be found wherever there are suitable hosts. Adult ticks tend to climb vegetation up to three feet high to wait for a large, warm-blooded animal to brush past. To reduce exposure possibilities, the natural landscape should have setbacks or paths for the human visitor to walk on without brushing against vegetation. The best prevention against Lyme disease is a careful check of body and clothes after being in an area likely to have ticks.

Myth: Natural landscapes are breeding grounds for mosquitoes.

Facts: Mosquitoes need standing water to breed. Even the fastest-maturing breeds require standing water for at least 10 consecutive days. A turf lawn, with its shallow root system, is more likely unable to soak up all the water from a heavy rain and to have long-standing puddles, than a natural landscape with its deeper-rooted native plants. Natural landscapes tend to be planned to take full advantage of native plants whose water requirements match the local rainfall and soils. Natural landscapes also improve habitat for mosquito predators, like birds.

Myth: Natural landscapes produce pollen that causes suffering for those with allergies.

Facts: Wind-borne pollens are the primary cause of hay fever. Any plant with showy flowers is pollinated by insects, not wind. The main hay fever culprit is ragweed, which thrives in disturbed or eroded areas like roadsides. Other major allergenic plants are the non-native grasses in turf lawns or pastures—Kentucky bluegrass, Bermuda grass, and timothy. Some tree species with wind-borne pollen, such as oak, also are allergenic. Perennial native plants and native grasses, the primary components of natural landscapes, generally do not produce wind-borne, allergenic pollen. In fact, encouraging these species to grow crowds out weedy pioneer species like ragweed that germinate and thrive at lawn edges.

Myth: Natural landscapes lower property values because they are 'messy' and unattractive.

Facts: Real estate with distinctive, well-done natural landscaping actually possesses a marketing edge, and has a positive effect on property values. Developers cite the natural landscapes retained in their developments as an asset, and charge more for naturally landscaped homes than for homes in areas with traditional landscaping. High-quality natural features like woodland corridors can preserve and strengthen a community's unique characteristics. Neighborhood organizations, environmental restoration professionals, landscape architects, and nurseries are turning more often to natural landscaping for aesthetic and economic reasons, as well as for environmental benefits like reduced stormwater runoff and improved wildlife habitat.

Other Benefits of Natural Managed Landscapes

Low maintenance: Instead of requiring intensive fall preparation, natural landscapes function best if stalks and seed heads are left standing and leaf litter is not raked away. Seed heads provide winter food for songbirds; stalks make winter shelter for beneficial insects. Leaf litter enriches the soil, shelters overwintering insects and spiders, and insulates hibernating amphibians. Limbs of dead trees may need to be pruned for safety, but non-hazardous snags (dead trees) can be left standing as habitat for cavity-nesting birds, such as woodpeckers, bluebirds, tree swallows, chickadees, and wrens. Constructing brush piles, instead of running dead branches through a chipper, can provide winter shelter for a variety of wildlife species.

Reduced maintenance costs: Natural landscapes require no or infrequent watering once established, need no or infrequent mowing, and need no commercial lawn maintenance services. The National Wildlife Federation estimates that the typical lawn costs \$700 per acre per year to maintain. A wildflower meadow can be maintained for \$30 per acre.

Less yard "waste": The National Wildlife Federation estimates that 18 percent of municipal solid waste collected is organic yard waste: cut grass, raked leaves, branch trimmings, and dead ornamentals. All of this material can be used in the natural landscape for compost, mulch, brush piles, or wildlife food or shelter.

Water savings: Most turf grasses, including Kentucky Bluegrass, are actually northern European species best suited to a cool, damp climate, and they need heavy irrigation during hot, dry summers. The National Wildlife Federation estimates that 30 percent of the water consumed on the East Coast goes for watering lawns. Natural landscaping conserves water that would otherwise be used on lawn irrigation because native plants are adapted to local rainfall levels.

Improved water quality: The Environmental Protection Agency (EPA) estimates that homeowners apply 10 times as much chemical pesticide to their lawns as farmers apply to cropland. Excess chemicals run off with rainfall into local waterways. Native plants need fewer or no fertilizer and pesticide applications. EPA research also proves that native vegetation out-performs turf grass in filtering contaminated water.

Improved soil aeration: National Wildlife Federation studies show that where pesticides are applied, 60–90 percent of earthworms are killed. Non-pesticide-treated soil has a healthy population of worms and other organisms that mix and aerate the soil as they feed on decomposing organic residues.

Reduced stormwater runoff and improved water table: Native plant landscapes outperform turf grass in absorbing runoff and replenishing groundwater supplies.

Reduced soil erosion: Native meadow plants and grasses have longer roots (up to 5–10 feet) than turf grass (4–6 inches) to better hold soil in place.

Reduced air and noise pollution because less mowing is required: Lawn mowing equipment is noisy and a heavy air polluter. The EPA estimates that the average lawn mower emits 11 times the air pollution of a new car for each hour of use.

Reduced electric use and cost: Natural landscaping with trees and shrubs can provide shade and windbreaks to lower the costs of home air conditioning and heating.

Creation of distinctive and attractive properties that preserve local identity: With a natural landscape, your property can reflect Pennsylvania's unique ecosystems.

Greater visual interest and diversity throughout the year: Ornamental grasses look spectacular in winter. Ornamental berries on native shrubs provide color and attract a variety of birds through fall and winter.

Habitat restoration and protection: Natural landscaping preserves plant biodiversity lost to suburban sprawl and provides habitat for attractive and beneficial wildlife. In some regions, backyards may be the last sanctuary for at-risk plant species.