



The environmentalist case for well-manicured lawns

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With summer now under way, homeowners across the land are out tending their lawns. But many can't help mowing, fertilizing or – heaven forbid – applying pesticides and herbicides without experiencing a vague sense of guilt.

Grass these days is distinctly out of fashion. Once glorified as a symbol of civic order, the lawn is now demonized as an example of the gross wastefulness of Western society. To urbanists, it stands for bland suburban uniformity, an anachronism in a day when smart Jane Jacobs cities strive for density and diversity. To the green movement, it is a sterile monoculture, sucking up fertilizers and water while polluting the earth with mower fumes and chemical run-off.

Greenpeace has declared that “a lawn is an unnatural ecosystem,” advising homeowners to “plant flowers, trees, bushes, ground cover and vegetables instead of grass.” The Sierra Club laments that Americans use 100 million pounds of pesticides and herbicides a year, and that “some of these chemicals leach into the groundwater, pollute the air, and get onto the skin and into the mouths of our children, pets, and other creatures.”

In Calgary, a citizens group lobbying for a lawn-chemical ban urges homeowners to replace their grass lawns with “xeriscapes,” landscaping that uses native and drought-resistant plants instead of the non-native Kentucky bluegrass that makes up most lawns in northern North America.

In her 2009 book *Lawn Wars: the Struggle for a New Lawn Ethic*, U.S. author Lois B. Robbins calls lawns an “ecological catastrophe” and argues that “our love affair with the lawn is drawing to a close.”

Before accepting this indictment on its face, pause for a minute to listen to a witness for the defence.

Alan White is no scientist. He holds no degrees. But he does know grass. As the owner of a 10-employee lawn-care company in Burlington, 45 minutes down the highway from Toronto, he has been studying it for more than two decades.

In that time, he has come to love the lowly plant with a boyish passion, calling it a “photosynthesizing, oxygen-producing, carbon-sequestering miracle.”

When others look at a golf course or a suburban lawn, they see a blank green carpet. He sees something different: a living, breathing organism that can help, not hurt the environment – as long as we learn to treat it right.

In his office this week, with a smile on his face and a gleam in his eye, he spoke about it for two straight hours, barely drawing breath as he explained how wrong the world is about grass and how badly we neglect it.

Now 45, he grew up in the the green landscape of the Niagara Escarpment, working on an orchard and at a Burlington golf course and becoming enthralled by the sights and smells.

“Anybody who has golfed early in the morning sees this haze and dew that is coming off the land. That’s the plants breathing.”

Only later, when he started Turf Systems Inc., did he learn how a lawn actually works and what it can do – that one of average size does as much good for the air as two mature maple trees. The oxygen it produces alone is enough for a family of four.

Partly because of its stable roots, grass absorbs and holds climate-warming carbon. One study found that even a lawn given minimal care can take in as much carbon as an equivalent forested area. Another part of the reason is the sheer number of shoots that an average lawn produces: six per square inch and 85 per square foot, or about 8.5 million in a 10,000-square-foot plot. Using satellite data, a scientist for

NASA's Earth Observatory estimated that if Americans left their grass clippings on the lawn to decompose, as many homeowners now do, U.S. lawns could store 37 billion pounds of carbon a year.

Grass is an excellent filter, too. Its dense, fibrous root system absorbs and cleans water. It prevents the erosion and runoff that are one of the main sources of pollution in Canadian waterways. A well-tended lawn absorbs rainfall six times more effectively than a wheat field. "It traps all the stuff the rainwater picked up before it hits our storm sewers," Mr. White says. Then there is its cooling influence. When the water drawn in by grass roots is released by its blades – the process called transpiration – it has an effect something like what happens when a human sweats. A Brigham Young University found that turf grass is about 7 degrees cooler than bare ground and 18 degrees cooler than asphalt. Plant more, healthier grass in cities, Mr. White says, and you can help counteract the heat-island effect that makes city dwellers suffer in summertime.

When he hears the claim that a lawn is a sterile environment, he can only laugh. Any lawn-care worker knows that grass is a haven for every kind of bug – grubs, ants, spiders, crickets, grasshoppers, mites, earthworms, beetles – not to mention the millions of microbes that feast on the root thatch and grass cuttings. A healthy, well-cultivated lawn is especially hospitable, supporting 25 to 40 grubs per square foot, compared with five to 10 for one that's unhealthy.

The water that helps it grow, Mr. White says, isn't wasted at all. It is transpired into the air or filters through into groundwater and flows into rivers and lakes. The maligned "synthetic" fertilizers that many homeowners use is only nitrogen, phosphorus and potassium, found naturally throughout the environment. To the grass, "it is just chemistry."

Rob Witherspoon, director of the Turfgrass Institute at the University of Guelph, agrees that healthy grass absorbs properly applied fertilizers and fixes them in the soil, preventing large-scale polluting runoff. Farm runoff causes far more trouble.

As for pesticides and herbicides, Mr. White's province, Ontario, and many municipalities across the country have banned them on lawns for health reasons that he considers bogus. Federal health authorities still consider them safe to use. But with a little tender loving care, he says, a lawn can grow just fine without them.

One knock against grass is hard to dispute: Kentucky bluegrass (scientific name: *Poa pratensis*) is a non-native species, originating in Eurasia. But so are the

starling and the house sparrow, the dandelion and horsechestnut tree. In a modern urban environment, most of what appears natural is introduced or managed. We can't turn all of our parks and lawns into a xeriscapes, which in any case often need as much weeding and other maintenance as grass does.

Mr. White concedes that by planting a non-native grass in our yards, "we're growing a plant in an incredibly inhospitable place but, if we can help it live, it will actually produce the very thing we need: a cleaner, cooler environment."

Grass also happens to be nature's best ground cover. In open spaces around houses or in parks, we need something to keep the earth from blowing away and to halt the natural progression from weeds to woody plants to bush that occurs when any natural area is left alone. Grass's great virtue, says Mr. White, is its most obvious one. "It withstands traffic. We can beat it up, we can mow it we can put thousands of people on it for a festival. At the end of the day, it has its own ability to revitalize and re-establish itself."

With more than 10,000 species, grasses are what the Encyclopedia Britannica calls "the most abundant and important family of the Earth's flora." Kentucky bluegrass and other turf grasses have evolved over time to be uniquely hardy. Because animals were always chomping on them – first in ancient grasslands, then in fields and paddocks around human settlements – they developed the ability to grow quickly after their blades were cut.

They also learned to reproduce without seeds. Left to their own, they will grow tall and produce seed heads, but they can also send out rhizomes: horizontal, underground stems that produce new shoots. That is one reason why grass keeps on growing even when you cut it before it goes to seed. Another is that the growing points, or meristems, of grasses lie at the base of the shoot, so that the stem can be cut and keep growing – a trick most flowering plants can't manage.

Grass, marvels Mr. White, can double its length in a week. How many other plants do that? He says it can do wonders for the urban and even the global environment if only we cultivate it properly.

The trouble is that we don't. Since the wave of pesticide bans, many parks, boulevards and school yards have been overwhelmed by weeds, lending them a scruffy appearance and reducing their environmental benefit.

Mr. White takes a visitor to Burlington on a tour of shame in his big white pick-up truck. We pass a housing project where a neglectful owner has let the grass grow

tattered; then a highway interchange where tall weeds and shrubs are overwhelming the carefully planted fir trees because the provincial highways department no longer cuts the grass; then a school playing field where a \$100,000 mower is essentially cutting weeds, sending up clouds of dust – something you would never see in a thick field of healthy grass.

Then he shows off his clients' lush, green lawns. He advises that they fertilize, water once a week for an hour or so, ideally before 10 a.m., and leave the grass to grow between 2.5 and 3 inches high before mowing, longer than many people are used to but better for the plant. "You can't expect it to grow unless you're going to nurture it. And if you only sort of nurture it, it only sort of gives back."

Most park lawns are a "disaster" now because of neglect and lack of understanding, he says. Many commercial properties often aren't much better. In Toronto, parents of young athletes revolted when the city tried to jack up fees for using sports fields. Why should we pay more, they demanded, when the state of turf is such a disgrace?

The way Mr. White sees things, it all springs from a lack of appreciation for the natural splendor of grass. "It's such a little plant that nobody really cares about," he says. Green roofs on office buildings are great, but we could get a bigger return on investment just by tending the grass in public parks.

Mr. White was one of a group of landscapers who volunteered to put down new sod and plantings in Toronto's St. James Park after it was trampled by Occupy movement protesters last year. He serves as president of Project Evergreen, a non-profit that lobbies to preserve and improve community green spaces.

Those spaces, he says, are our most overlooked environmental resource, a potential boon for the air, water and soil. Like a neglected machine, they sit idle, the engine tuned off. Instead of scorning lawns or neglecting the grass, he demands, "why don't we just turn the landscape on?"

A green planet may depend in part on green grass.

SODDING EVOLUTION

The word lawn may come from the earlier English word *laune*, which meant a glade or open space among the woods.

Nobles scythed the the grass around their castles to have a clear sight of enemies, farmers around their homesteads to keep down pests and feed the livestock.

The groomed ornamental lawn seems to have been pioneered by European estate owners. The idea migrated to the Americas with colonization.

In Canada, the popularity of lawn bowling helped it take off. In the United States, the designer of New York's Central Park, 19th-century landscape architect Frederick Law Olmstead, created suburbs that had houses set on grassed plots.

As suburbanization took hold after the Second World War, lawns spread. Today, lawn grass is believed to be the biggest irrigated crop in the United States, covering even more area than corn or wheat.