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Lawns for Life

Would you trade your health for a perfect lawn? Many Americans see it as a good deal. Back in the day, in Europe, the short-cut green lawn was a symbol of aristocracy, like a work of art. Then Americans, as usually, took the idea and perverted it. Rich Americans groomed their grass to show off, then they pushed others to do the same, and later, replaced manual lawn care tools with gas-powered ones. Unfortunately, the environmental and health impacts of these activities have proven to be very negative, which raises the questions: how come this practice is still in place, and how come that American priorities are in favor of a visually flawless lawn rather than health and well-being? Hopefully, presented statistical data, study findings, expert opinions, and personal observations will help readers see the costs and causes of the current situation and find solutions, based on provided alternatives.

The idea of a perfect lawn came to the United States in the 18th century from England, where the cool, moist climate was ideally suited for growing lawns. The vast English parks contained mixed-grass meadows cropped by cattle, sheep, or deer. In smaller areas, grass was cut by scythes, and skilled workers were hard to find and expensive to hire. Impressed by what they saw, rich American landowners also started planting and cutting grass in their yards; this way, they demonstrated their status.

Mechanical mowing came about in the beginning of 19th century. Edwin Budding, an engineer at a textile mill, noticed that a machine used to shear the cloth could as well handle his tall grass at home. (Lawn Mower) He created a reel-type mower as a series of blades arranged

around a cylinder with a push handle. It looked much like any non-powered, aerobic-workout lawn mower of today, still available in hardware stores. This invention revolutionized lawn care.

The idea of a perfect lawn was firmly promoted in the early 20th century, when the women of the Garden Clubs of America initiated community campaigns for the best lawns. Around that time, the aesthetic changed from the diverse grasses and wild flowers to weed-free grass of a uniform color and texture. The garden club stipulated that the proper lawn was "a plot with a single type of grass with no intruding weeds, kept mown at a height of an inch and a half, uniformly green, and neatly edged." Because of this mania, a multibillion lawn-care industry has developed in USA, unlike any other country in the world. (Jenkins)

After the World War II, lawn advertising encouraged men to use the power machinery in their yards. In the 1950s, riding mowers were marketed as "little cars" to homeowners with money and leisure. By the early 60s, gas-powered mowers were so common that in 1961 C.B. Mills, an agronomist, said this about mowers: "Today, if all of them in a single neighborhood were started at once, the racket would be heard round the world." (Cumo 75)

Today, American obsession with green yard carpets is a big business. As observed with satellites, the country is covered by 40 million acres of lawns, which is four times more than of irrigated corn. (Diep) Yearly, Americans spend more than 40 billion dollars on lawn care, (Steinberg 5) making this activity more costly than growing corn, rice, or sugarcane. Americans use about 800 million gallons of gas per year on lawn mowing, as estimated by Environmental Protection Agency. (Robbins 1030) While that figure is small compared to total gas consumed in the country yearly, lawn equipment is a big contributor to the pollution problem.

Health, legal, economic, and ecological issues are directly linked to the wide use of gas-powered lawn equipment. Their engines give off exhaust loaded with hazardous air pollutants, which our bodies cannot filter out. The microparticles can remain in our lungs forever, impairing

breathing and causing heart disease. (CEAP) The adverse health effects of exhaust emissions include asthma, respiratory disease, chronic obstructive pulmonary disease, lung cancer, cardiovascular disease, hypertension due to noise, neurologic disorders, effects on prenatal development, premature births, and hearing loss. In addition, dust clouds raised by blowers make walking and bicycling unpleasant and even hazardous for those with asthma or allergies. Some of the chemicals found in large quantities in gas-powered lawn equipment are toxic and carcinogenic. Carbon monoxide forces the heart to work harder to make up for the displaced oxygen, so we get more patients with heart problems. Benzene, 1,3-butadiene, and formaldehyde are causing lymphomas, leukemias, and other types of cancer. Volatile hydrocarbons form ground-level ozone, causing heart and lung diseases. The last, peroxyacetyl nitrate (PAN) irritates eyes, and the suspended dust may include ash, mold, spores, pesticides, pollen, fecal matter, and toxic metals from paved roads. (CEAP 24) Seemingly, many Americans sell their health cheap for a perfectly looking lawn.

Although operators of gas-powered tools are exposed the most, bystanders, including children, may also suffer from high levels of emissions from blowers, mowers, and trimmers, used routinely in neighborhoods, schools, parks, and other public places. Marina Flores, a Riverside City College student, pursuing a degree in Business Administration, admitted that the noise from lawn-care activities gives her stress. She lives near the alley, where many businesses are located, and these businesses constantly maintain the alley. Every time the brigades of "mow blow and go" start their machines, the piercing noise and smell of gasoline gives her anxiety. Although Marina justifies the result (the neat alley), she agrees that the same outcome could have been achieved differently, without sacrifice for our physical and mental health. (Flores)

Despite the health damage that gas-powered lawn tools cause, they are used extensively in Riverside, even though their use often violates environmental protection laws. Comparing the

Riverside law on noise control with the reality, it becomes clear that leaf blower noise exceeds the limit established for residential areas in daytime, 55 dBA (Riverside Municipal Code), while regular blowers emit 75 dB from 50 feet away, and about 100 dB at operator's ear. (CEAP 28) Therefore, blower use violates the law and should be stopped.

In a 1998 attempt to ban leaf blowers, Sacramento citizens argued that, apart from health concerns, noise interferes with communication, sleep, and productivity, which in overall, impairs quality of life. (CQS) For the same reasons, more than twenty Californian cities officially banned leaf blowers by 1997. In Santa Monica, where blowers have been outlawed since 1991, their operators are fined between \$250 and \$1,000. (Crouch and Miranda)

Economic impact of gas-powered lawn care on households is also weighty. As mowers use 800 million gallons of gasoline yearly, about 17 million gallons is spilled while users are filling up the gas tanks. (Robbins) Additionally, the gears themselves must be replaced and maintained, which is not free. Most people use hired help to mow, blow, and edge their grass, meaning monthly expenses. Absurdly, homeowners pay lawn-service people for simply blowing all the leaves from the yard into the road. Whether realizing futility of this work or not, lawn-care people secure their next paycheck, expecting that by next week, the wind will blow all those leaves back into the same yard. Unlike leaves, though, wasted money are blown away forever.

In addition to health, legal, and economic disbalance, gas-powered lawn-care creates ecological damage. Although, the grass itself is good, as it removes carbon dioxide from the air and replenishes some oxygen, its mowing, trimming, and blowing (leaving aside chemical fertilizing) produce "similar to or greater than" amount of carbon than grass removes. Moreover, gas-powered lawn care produces fuel spillage, and oil ends up in the waterways and soil. Therefore, the carbon-storing benefits of lawns are counteracted by emissions. (UC Irvine)

As monocultural lawns replace native vegetation, the water quality problems arise. Maya van Rossum, Delaware Riverkeeper, explains how maintaining monocultural lawns are deadly to the soil and water supplies:

When vegetated with native trees and shrubs [...], the land acts as a sponge. Rainwater percolates into the soil and re-supplies the aquifers that provide our drinking water. [...]
However, lands vegetated exclusively with grass, cannot perform the functions of the natural landscape. [...] Lawn mowers and heavy traffic cause soil compaction, which limits infiltration. [...] Like roadways, lawns shed rain during a storm event rather than allowing it to infiltrate. (van Rossum)

Diane Hoffmaster, a microbiologist, also describes how blowers hurt soil and plants:

The wind that blows from the nozzle of a leaf blower comes out at speeds close to 180 mph. Wind that strong does not occur in nature unless you are standing in the middle of a tornado. [...] While you are blowing this extremely hot, dry air [...], you are also blowing away a significant amount of top soil, drying out all the plant roots, and killing all the beneficial bacteria that live on top of the soil. (Hoffmaster)

To top the disaster, blowers spread fungal diseases from among the plants and prevent natural fertilization by composted leaves. (Hoffmaster) The cited experts may be putting some aspects of American dream under attack, but they seem to make sense to anybody who has minimal knowledge in life science, an open mind, and a bit of logic.

Finally, ozone pollution problem can be attributed in part to lawn care. As in cars, the energy is generated from combustion of fossil fuels, which results in release of volatile organic compounds. On sunlight, these compounds form ground-level ozone. (CEAP 13) Unlike “good” ozone in the upper atmosphere, ground-level ozone is a pollutant and strong oxidizing agent. It irritates eyes and respiratory tracts of people and animals and interferes with plant growth.

American Lung Association, gives Riverside county a grade F (Fail) on ozone and particle pollution. In contrast, Sonoma County is graded A in both, and Monterrey county got A and B respectively. (ALA). As a matter of fact, both Sonoma and Monterrey counties banned leaf blowers for their polluting side effects. This is an example of how destructive lawn care practice in Riverside may have killed its air quality. In general, the modern American lawn care practices come with high costs for our health, finances, and ecology.

Health and environmental problems triggered by lawn maintenance stem from two-stroke engines as a technical cause, and American laziness, combined with ignorance, as a human-based cause.

Although lightweight and cheap, two-stroke engines have developed a reputation of an environmental hazard. They emit 300 times the hydrocarbons of the pickup truck and 93 times the hydrocarbons of the sedan. (Kavanagh) One third of the fuel fails to undergo complete combustion; as a result, hydrocarbons escape from the engine in large quantities. Operating a lawn mower for one hour emits as much smog-forming pollution as driving a 2016 Toyota Camry from Los Angeles to Las Vegas, and one hour of operating a leaf blower emits pollution comparable to driving a 2016 Toyota Camry from Los Angeles to Denver. (CARB)

Two-stroke engines pollute due to the combustion of the oil and fuel leaks. As fuel is mixed with oil, the burning oil makes these engines smoky. Additionally, each time a new part of air-fuel mixture is loaded, some of it leaks out. The leaking hydrocarbons combined with the leaking oil is an insult to the environment and the precise road to lung damage and cancer.

Cities where two-stroke engines are in wide use suffer terribly from air pollution. For example, some cities in India are covered in heavy soot, due to auto-rickshaws powered by this type of engines. After Delhi phased out thousands of auto-rickshaws with two-stroke engines, the pollution has been eased a bit, but few cities have followed Delhi's lead. (Palmer)

Using two-stroke engines to keep the yard clean, while making the surrounding air dirty, obviously, makes no sense. The same result could have been easily achieved with less destructive technology. People who use or justify the use of gas-powered pieces of equipment for lawn grooming are seen by me as simply lazy, ignorant, and brainwashed.

Lazy American people see raking as something extremely demanding, boring, and humiliating rather than a fun workout in the fresh air. Raking leaves burns 240 calories, (Kim) and manual lawn mowing (using push reel mower) burns 298 calories per hour, (Becker) and both also help build upper-body and core strength. Despite advantages of manual yard work for body and spirit, lazy people prefer to spoil the air and make people around sick just to make as little movements as possible, while bragging their perfectly sterile and manicured lawn.

Except being lazy, ignorant people assume that green grass is the highest priority in their lives, and everything and everybody else are less important. Intentionally or not, gas-powered lawn equipment users put others in danger without feeling guilty about it. While operators wear earphones and facemasks to protect themselves, bystanders, who do not usually carry masks and earplugs with them, happen to be in more vulnerable position. Just because somebody is too lazy and narrow-minded, others have to live in constant stress and develop allergies and diseases. In my view, this order of things in Riverside and similar contaminated places is highly unjust.

Lazy and brainwashed people are profitable to commercial landscapers and gas companies, converting public illiteracy into dollars. Landscapers try to defend their leaf blowers, calling them “efficient” and “safe,” (CLCA) none of which is true. Why, when blowers dry out and harden the soil or spread diseases among plants, the same laws-service people will gladly sell chemical treatments and fertilizers. In short, businesses thrive on national narrow-mindedness.

Many Americans seem to be fed with horror stories of stray leaves and creepy wild flowers, and they try to destroy anything that dares to enliven their sterile lawns. In his article A

Leaf-Cleanup Confession, Todd Burger describes his leaf-battle experience. Despite his attempts being environmentally-friendly, he eventually gave up and bought a leaf blower. While admitting his input to the pollution and global warming, he concludes proudly: "But if the rains and flooding do come, at least my yard will be leaf-free." (Burger) This example shows how deep the perceived problem of "evil" leaves sits in American people's heads impairing the logic. All in all, if some people value their lifeless lawns over their families' health and well-being, they will hardly care about anybody else, who is unlucky to be their neighbor or passerby.

As some people realize how much damage their grass carpets cause, some switch to native landscapes, requiring little maintenance. Alternatives include wild-flower meadows in the Northeast, home prairies in the Midwest, and desert gardens in the Southwest. "Scientists work to hybridize dwarf grasses that need little mowing or watering. The herbaceous border, a mixture of annual and perennial plants around a grassy lawn popularized by horticulture writers in the 1880s, has remained the ideal of many American gardens into the 21st century." (Encyclopedia of Recreation) I appreciate the beauty of "abandoned" nature over manicured lawns. For example, Hidden Valley, the natural park along the Santa-Ana River trail, still boasts its naturally green hills in winter because people are not allowed to "maintain" it. Done with taste, the natural yard can increase property value and improve quality of life.

Persistent homeowners who would never say "no" to their beloved mowers and blowers, could consider switching to low-emission or electric ones. Today, low-emission gasoline engines, with improved muffling devices are being manufactured. Different types of electric leaf blowers and vacuums are also available, and some of them can even mulch leaves, making them a great natural fertilizer. This technology gives better control over placement of leaves, reduces exhaust, and is quieter than gas-powered blowers. Solar-powered mowers and blowers are best suited for Southern California, where the sun is abundant. They give off zero emissions since the

energy is obtained from the sun rather than gasoline as fuel, and the solar battery can operate for two hours. (Lawn Mower) Fortunately, improved lawn-care products are coming to market.

Although low-polluting and electric devices are a good compromise, the best alternative technology is manual reel-type mower, available in hardware stores for as cheap as 70 dollars. For a leaf battle, the most effective technology is called “rake and broom.” It offers complete control over placement of leaves, and it also provides exercise for arms, back, and chest muscles. My colleague, Rylan, for several times, compared the actual time it took him to rake leaves with the time it took his neighbor to blow them around, and has noticed almost no difference. This manual solution is great for small landscapes, like most of American suburban households.

To sum up, lawn-care practices involving highly polluting maintenance bring much more negative effects for our health, ecology, and finances than they do good. Although our modern lives can hardly be pollution-free, we can at least alleviate damage by ending the use of gas-powered tools for simple yard tasks and switching life priorities away from perfect lawns. The grass, native or not, is good by itself, and lawns are welcome if they bring more benefits than harm. However, if lawns involve destructive maintenance, they become an ineffective investment and their care an unhealthy activity. Therefore, the practice of gas-powered lawn care should be discouraged, especially, in the southwest, where water is scarce, and hot temperatures facilitate ozone pollution. People obsessed with their green yards, should learn to respect the others, so everybody in this country finally gets a chance to enjoy a healthy and peaceful life.

Works Cited

- ALA, American Lung Association. *City ranking*. 2018. <<http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/california/riverside.html>>.
- Becker, Andrea. *How to Calculate the Carbon Footprint of Your Lawn Mower*. 25 April 2017. <<https://sciencing.com/calculate-carbon-footprint-lawn-mower-24046.html>>.
- Burger, Todd. "A Leaf-Cleanup Confession." *Boston Globe Magazine* 2 December 2012: R.10. <<https://www.bostonglobe.com/magazine/2012/12/02/leaf-cleanup-confession/uchuSVnYCW4ZjHqHJdmGFK/story.html>>.
- CARB, California Air Resources Board. "Small Engine Fact Sheet." June 2017. *California Environmental Protection Agency*. <https://www.arb.ca.gov/msprog/offroad/sm_en_fs.pdf>.
- CEAP, California Environmental Protection Agency. "A Report to the California Legislature on the Potential Health and Environmental Impacts of Leaf Blowers." February 2000. <<http://www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf>>.
- CLCA. "CLCA Position On Leaf Blowers." *California Landscape Contractors Association* <<http://www.clca.org/leaf-blowers/index.php>>.
- CQS. *Citizens for a Quieter Sacramento*. <<http://www.nonoise.org/quietnet/cqs/cqs.htm>>.
- Crouch, Angie and Stephanie Miranda. "After Residents Complain Ban is Too Soft, Santa Monica Gets Tough on Leaf Blowers." *NBC LA* 12 November 2012. <<https://www.nbclausangeles.com/news/local/Santa-Monica-Gets-Tough-on-Leaf-Blowers-179037061.html>>.
- Cumo, Christopher. *Science and Technology in 20th-Century American Life*. Greenwood Publishing Group, 2007. <<https://books.google.com/books?id=sLeE586TgXwC&pg=PA75&lpg=PA75&dq>>.

Diep, Francie. "Lawns vs. Crops in the Continental U.S." *Scienceline* 3 July 2011. Online-Magazine. <<http://scienceline.org/2011/07/lawns-vs-crops-in-the-continental-u-s>>.

Flores, Marina. Personal Interview 2 April 2018.

"Gardening and Lawn Care." *Encyclopedia of Recreation and Leisure in America*. April 2004. <<https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/gardening-and-lawn-care>>.

Hoffmaster, Diane. "The Leaf Blower: A Lazy Person's Lawn Manicure." 18 September 2016. <<https://www.turningclockback.com/the-leaf-blower-a-lazy-lawn-manicure>>.

Jenkins, Virginia. *The Lawn: A History of an American Obsession*. Washington, DC: Smithsonian, 1994. <<https://books.google.com/books?id=DjwWCAAAQBAJ&lpg=PP1&pg=PT13#v=onepage&q&f=false>>.

Kavanagh, Jason. *Emissions Test: Car vs. Truck vs. Leaf Blower*. 5 December 2011. <<https://www.edmunds.com/car-reviews/features/emissions-test-car-vs-truck-vs-leaf-blower.htm>>.

Kim, Jina. "Fall into Good Health." *Vibrant Life* September 2009: 19. ProQuest. Magazine. <<http://ezproxy.rcc.edu/login?url=https://search.proquest.com/docview/216517916?accountid=39229>>.

"Lawn Mower." *How Products Are Made*. Gale Research, 1996. Encyclopedia.com. 10 April 2018. <<https://www.encyclopedia.com/plants-and-animals/agriculture-and-horticulture/agriculture-general/mower>>.

Palmer, Brian. "How bad for the environment are gas-powered leaf blowers?" *Washington Post* 16 September 2013. <<https://www.washingtonpost.com/national/health-science/how-bad->

for-the-environment-are-gas-powered-leaf-blowers/2013/09/16/8eed7b9a-18bb-11e3-a628-7e6dde8f889d_story.html>.

Riverside Municipal Code. "Title 7, Section 7.25.010." Ord. 847, 2006. *City of Riverside*.

<<https://www.riversideca.gov/municode/title7.asp>>.

Robbins, Paul, ed. *Encyclopedia of Environment and Society*. Vol. 1. Thousand Oaks: SAGE Publications, 2007.

<<https://books.google.com/books?id=9JvtBQAAQBAJ&pg=PA1030>>.

Steinberg, Ted. *American Green: The Obsessive Quest for the Perfect Lawn*. 1. Norton & Co.,

2006. <[https://www.amazon.com/American-Green-Obsessive-Quest-](https://www.amazon.com/American-Green-Obsessive-Quest-Perfect/dp/0393060845?ie=UTF8&s=books&qid=1214260583&sr=1-1)

[Perfect/dp/0393060845?ie=UTF8&s=books&qid=1214260583&sr=1-1](https://www.amazon.com/American-Green-Obsessive-Quest-Perfect/dp/0393060845?ie=UTF8&s=books&qid=1214260583&sr=1-1)>.

UC Irvine. "Turfgrass." *UCI News* 19 January 2010.

<<https://news.uci.edu/2010/01/19/turfgrass>>.

van Rossum, Maya K. "Green Lawns Don't Make For "Green" Yards." *Delaware Riverkeeper Network*.

<http://www.delawareriverkeeper.org/sites/default/files/resources/Factsheets/DRNFactsheet_OnGreenYards.pdf>.