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LIVING LANDSCAPES

Fact Book

Why the family yard is important & how to be backyard ready year-round

June 2018

SaveLivingLandscapes.com



ARE YOU BACKYARD READY?

Your family yard is an outdoor living room – providing a respite from stress, offering an outside entertainment area, expanding your living space, and giving kids and pets a safe place to play. In addition to enhancing our lifestyle and providing a center of health and relaxation, the family yard is also beneficial to the environment.

New research conducted by Harris for the Outdoor Power Equipment Institute (OPEI) suggests the American love affair with the living landscape continues. Nearly all Americans (9 out of 10) have a yard, and 86% say it's important to have a living landscape and grass. More than two-thirds enjoy taking care of their yards.

OPEI offers this guide with statistics and facts to showcase just how important the family yard is and to help you be backyard ready, any time of the year.

Value of the family yard & our living landscapes

A balanced living landscape is comprised of the grass, trees, shrubs and flowering plants in our family yards and community green spaces. These living landscape areas support humans, wildlife, the environment, and the economy. Living landscapes:

- Provide recreational space for people and pets,
- Reduce stress and combat nature deficit disorder,
- Improve overall health and well-being,
- Provide valuable wildlife habitat,
- Support pollinators,
- Boost curb appeal,
- Improve property value
- Reduce crime, and
- Benefit the environment by capturing and filtering rainwater, producing oxygen, absorbing carbon and more.

The Golden Rule of Living Landscapes: right plant, right place

As this guide shows, our living landscapes are beneficial when we put the right plant in the right place. This decision is based on your climate zone, family needs and lifestyle. Remember, nature starts in your backyard! Each of us must preserve our corner of the ecosystem by protecting the living landscapes in our family yards, schoolyards, community parks and commercial green spaces.

For more information, visit SaveLivingLandscapes.com



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CONTACTS

OPEI

1605 King St.
Alexandria, VA 22314
(703) 549-7600

MEDIA CONTACTS

Ami Neiberger-Miller
Four Leaf Public Relations, LLC
(703) 887-4877
ami@fourleafpr.com

Debbi Mayster
Four Leaf Public Relations, LLC
(240) 988-6243
debbi@fourleafpr.com



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How to be Backyard Ready Year-Round

**No matter where you live, you can have a living landscape.
You just need to have the *right* lawn and landscape.**

- **Remember, nature starts at your backdoor.** Your yard, our parks, schoolyards and other community green space are vital to the world's ecosystem and to our health and well-being.
- **Choose the appropriate living landscapes.** Nine in 10 Americans say it's important to have a landscape at their home, and women are more likely than men to value having a landscape (90% vs. 85%).¹ Find your plant hardiness zone on the [USDA Plant Hardiness Zone Map](#) to determine the best types of turf, trees, shrubs and plants for your location.
- **Select the right grass.** Nearly all Americans have a yard, and 89% of those who do believe having grass in their yard is good for the environment.² But selecting the **right** grass is important. There are hundreds of varieties of turfgrass, and some of them – like Buffalo and Bermuda – even do well in drought-prone areas.
- **Plant grasses that are hardy.** Buffalo and Bermuda grasses are two species that are drought-tolerant and also will survive foot traffic, children's play and pets.
- **Incorporate pollinator plants.** Remember to also plant for bees, butterflies and birds.
- **Mix native plants with adaptive plants and grasses.** Most of us live in man-made cities and suburbs where we must incorporate plants into an area with a lot of concrete, asphalt, people and traffic. You need both native plants and drought-resistant adaptive species that can survive these conditions.
- **Plant to slow and capture water.** Water sheets off hard surfaces, asphalt and other hardscapes in cities and suburbs. Grass and plants slow down and capture this water, recharging underground aquifers.
- **Water wisely.** Only water your yard when it is necessary. Install watering solutions – like smart controllers on irrigation systems – that help you use less water, but still maintain a living landscape.
- **Understand too much water is bad for grass.** Over-watered grass grows roots in a horizontal pattern, making it lazy. With less water, grass will send its roots deeper – vertically – seeking water. Working harder makes grass do a better job of sequestering carbon and releasing oxygen.



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OUTDOOR LIVING ROOM & OVERALL WELL-BEING

Living landscapes are a key part of the outdoor lifestyle that Americans enjoy.

- The majority of Americans have a yard comprised of grass (86%), trees/bushes/shrubs (80%), pavers, cement, bricks, patio (51%) and landscaping rocks/gravel (47%).³
- Homes in the U.S. are getting bigger, while yards are getting smaller, which is detrimental to our mental health.⁴
- A systematic research review concluded that “the balance of evidence indicates conclusively that knowing and experiencing nature makes us generally happier, healthier people.”⁵
- Physicians are now prescribing time outdoors for some patients, according to recent reports.⁶
- Research shows walking in a park may be much more beneficial than walking on a crowded city street.⁷
- According to Canadian researchers, living in a greener neighborhood could lower the risk of early death.⁸
- In a study of older urban dwellers, German scientists found people living near the forest may be better able to cope with stress.⁹
- Researchers in England found that people moving to greener areas experienced an immediate improvement in mental health that was sustained for at least 3 years after they moved. The study also showed that people relocating to a more built-up area suffered a drop in mental health.¹⁰
- People who live within a half mile of green space were found to have a lower incidence of 15 diseases by Dutch researchers — including depression, anxiety, heart disease, diabetes, asthma and migraines.
- A 2015 study found that people living on streets with more trees had a boost in heart and metabolic health.¹¹
- Studies show that tasks performed while under the calming influence of nature are performed better and with greater accuracy, yielding a higher quality result. Spending time in gardens can improve memory performance and attention span by 20 percent.¹²
- People who gardened for at least 30 minutes a week had lower body mass indexes (BMIs) – a measure of body fat – as well as higher levels of self-esteem and better moods overall. They also reported lower levels of tension and stress.¹³
- Mycobacterium vaccae in soil mirrors the effect on neurons that drugs like Prozac provide. The bacterium stimulates serotonin production, which makes you relaxed and happier.¹⁴
- Walking or running in green spaces, instead of synthetic environments, led to decreased anger, fatigue and feelings of depression, while increasing attention levels.¹⁵



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LIVING LANDSCAPES & CHILDREN'S HEALTH

Exposure to green space benefits children in several ways.

- Teaching outside can help students be more attentive to learning.¹⁶
- Children who are raised on farms in a "dirtier" environment than an urban setting not only have a stronger immune system but are also better able to manage social stress.¹⁷
- Primary schoolchildren who have been raised in homes surrounded by more greenspace tend to have larger volumes of white and grey matter in areas of the brain associated with improved cognitive function.¹⁸
- Exposure to natural settings may be widely effective in reducing ADHD symptoms.¹⁹
- Children's stress levels fall within minutes of seeing green spaces.²⁰
- Children gain attention and working memory benefits when they are exposed to greenery.²¹
- Chicago girls living in public housing performed better on tests measuring self-discipline if they had greener views from their apartments.²²
- Researchers found that Barcelona school children who had more exposure to the outdoors performed better on cognitive testing. The effect was greatest when both home and school environments provided "green" time.²³
- A systematic review of research indicates children who are exposed to gardening eat more fruits and vegetables.²⁴

FAMILY YARD & PLAY SPACE

Grass provides a safe place for children and pets to play.

- Nine out of 10 Americans have a yard, and 78% of Americans have grass in their outdoor family room.²⁵
- An outdoor play area provides a safe place for children and pets to play, while creating an outdoor living area for the entire family to enjoy.
- Outdoor play increases fitness levels and builds active, healthy bodies, an important strategy in helping the 1 in 3 American kids who are obese get fit.²⁶
- Research shows children reap numerous health, social and personal benefits from spending time outside playing.²⁷
- Combined, trees and grass foster activities such as recreation, which is important for child development.²⁸



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FINANCIAL BENEFITS OF THE FAMILY YARD

Green spaces add more green to your wallet and reduce crime when vacant lots are “greened up”

- Landscaping in vacant lots has been shown to reduce overall crime by more than 13%, reduce burglary by 22% and decrease nuisance reports by 30%.²⁹
- Living landscapes are good for property values. A beautiful landscape improves curb appeal and can increase home values by as much as 17%.³⁰
- Among Realtors®, 96% have suggested sellers improve curb appeal before listing a home for sale. 98% of Realtors® believe curb appeal is important to a potential buyer.³¹
- Each front yard tree adds 1% to a homeowner’s sale price, while large specimen trees can add 10% to property values³².
- According to the Urban Forest Coalition, 100 million mature trees around U.S. residences save approximately \$2 billion annually in reduced energy costs³³.
- Strategically placed trees save up to 56% on annual air conditioning costs. In the wintertime, evergreens that block winter winds can save 3% on heating.³⁴
- In tree-lined commercial districts, people shop more frequently, take longer shopping trips, and are willing to spend 12% more for goods³⁵.
- Cost/benefit analyses show that landscaped plants are worth the investment in resources, especially water. Selecting drought resistant plants, coupled with proper management and irrigation, allows lawns and landscapes to flourish while still saving water.³⁶
- According to a British study of people who exercise in nature, outdoor exercise delivers an estimated £2.2bn of health benefits to adults in England each year³⁷.
- Consumers can use the National Tree Benefit Calculator ([TreeBenefits.com/calculator/](https://www.treebenefits.com/calculator/)) to estimate the economic and environmental value trees provide on an annual basis.



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BIODIVERSITY & WILDLIFE

Living landscapes support biodiversity and wildlife.

- Your yard, our parks, schoolyards and other community green space are vital to the world's ecosystem. Nature starts in your own backyard.
- Tiny forests, small city forests as big as a tennis court in the Netherlands (600 trees of 40 species) have been shown to increase biodiversity.³⁸
- Urban environments are largely responsible for the loss of biodiversity. Increasing natural habits for birds, insects and other animals with living landscapes can help combat this problem.³⁹
- Grass, trees and shrubs and other plant life provide food and habitat for birds and small mammals.⁴⁰ Insects, spiders and worms live among the grass blades and below the surface in the turf.
- Xeriscaping or hardscaping forces birds, squirrels and other animals to forage for food elsewhere. If we eliminate living landscapes from urban and suburban life, birds and wildlife will lose their habitat.
- The drought is negatively impacting many species who rely on green space for food and shelter. Small mammals are more likely to be impacted than large mammals that can simply move elsewhere to find food, water and shelter.⁴¹



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HEAT ISLANDS

Living landscapes dissipate the heat island effect in urban areas.

- Called the “heat island effect,” air temperatures in cities, even after sunset, can be as much as 22°F warmer than air in neighboring regions.⁴²
- According to the Environmental Protection Agency (EPA), on a hot, sunny summer day, roof and pavement surface temperatures can be 50–90°F hotter than the air.⁴³
- Turfgrasses dissipate radiant heat through a process called evapotranspiration. Planting vegetation and grass, or installing green roofs, are among the strategies the EPA recommends to mitigate the heat island effect.⁴⁴
- There is a direct relationship between surface temperature and the cooling effect provided by turfgrass. In one research study of surface temperatures, from 7 a.m. to 7 p.m., natural turf had the lowest average temperature of 78°. Concrete and bare soil had average temperatures in the mid-90s. Asphalt had an average temperature of 98° and artificial turf (also known as plastic grass) came in at a scorching 117°!⁴⁵
- Lawns can be 31 degrees cooler than asphalt and 20 degrees cooler than bare soil.⁴⁶
- Eight average-sized front lawns can provide the cooling equivalent to air-conditioning for 18 homes.⁴⁷
- Urban forests help keep cities cool. In fact, large parks or tracts of urban trees can cool daytime summer temps by about 10°. Shaded ground can be up to 36° cooler than unshaded ground.⁴⁸



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AIR QUALITY

Turfgrass improves air quality.

- Research has shown that turfgrasses remove “atmospheric pollutants such as carbon dioxide, ozone, hydrogen fluoride and peroxyacetyl nitrate from the air.”⁴⁹
- Grass also plays a vital role in capturing dust, smoke particles⁵⁰ and other pollutants that harm people.⁵¹
- Without the oxygen-producing boost that plants such as grass, trees and shrubs offer, air quality levels will get even worse in drought-stressed areas that have programs promoting the removal of living landscapes.
-

OXYGEN PRODUCTION

Our living landscapes are incredible oxygen-making machines.

- A 25-square foot area of turf supplies enough oxygen to support one person for a day.⁵²
- A turf area 50' x 50' produces enough oxygen to meet the daily needs of a family of four.⁵³
- Two mature trees provide enough oxygen for one person to breathe over the course of a year.⁵⁴
- A 100-foot tree, 18" diameter at its base, produces 6,000 pounds of oxygen.⁵⁵
- In L.A. alone, trees remove nearly 2,000 tons of air pollution each year.⁵⁶



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CARBON SEQUESTRATION

Turfgrass is a carbon sink.

- Carbon sinks absorb the greenhouse gas carbon dioxide from the atmosphere. Plants absorb carbon dioxide from the atmosphere to use in photosynthesis. Some of this carbon is transferred to soil as plants die and decompose.⁵⁷
- The dense canopy and fibrous root system in a lawn sequesters carbon so well that it outweighs the carbon used for maintaining the grass by as much as seven-fold.⁵⁸
- Grasses remove about six tons of carbon dioxide per acre per year from the atmosphere.⁵⁹
- Scientists have found that recycling grass clippings on lawns (or grasscycling) will sequester even more carbon.⁶⁰
- An average-sized home lawn in the United States has the potential to sequester 20.3 to 163.4 kg C/lawn/year.⁶¹
- Strategies for reducing water use that alter urban land cover can result in significant atmospheric responses that must be considered to ensure efforts to mitigate climate warming are not reversed.⁶²

NOISE POLLUTION

Living plants help control noise pollution.

- The World Health Organization (WHO) concluded that noise pollution is a threat to our wellbeing.⁶³
- The average community noise level is four times higher than it was 20 years ago.
- Grassy areas absorb noise, which cut down on excessive sound, a growing problem in urban areas, where hardscape and pavement reverberates sound.
- Grassy slopes alongside lowered expressways reduce noise 8-10 decibels.⁶⁴
- Scientists found that green roofs have the highest potential to enhance quietness in courtyards and may be able to reduce noise by up to 7.5 decibels.⁶⁵



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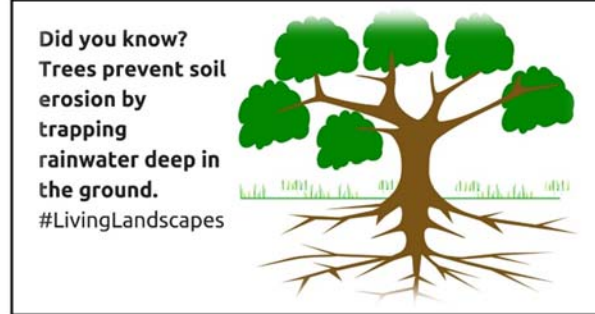
RAINWATER HARVESTING & STORMWATER RUNOFF

Living landscapes capture and filter rainwater, reduce runoff and recharge underground aquifers.

- Rain water “sheets off” hard surfaces, like hardscapes, artificial turf, parking lots, driveways and roads. Instead of going into the ground, rain water becomes fast-moving storm water runoff, which pollutes water.
- Grassy areas mitigate storm water runoff. Acting like a sponge, grass slows down and absorbs runoff, cleanses water of impurities and dust, and recharges groundwater aquifers.
- The biology of turfgrass makes lawns a nearly ideal medium for the biodegradation of all sorts of environmental contamination.⁶⁶ Research has shown that turfgrasses are excellent at filtering excess nutrients and sediment.⁶⁷
- The grass filtration system is so effective that rain water filtered through a healthy lawn is often as much as 10 times less acidic than water running off a hard surface.⁶⁸
- Turfgrasses can remediate contaminated soil by cleaning it; grasses are more effective at cleansing contaminated soil than trees or shrubs.⁶⁹
- Replacement of turf with other vegetation will not provide the cleansing capabilities of grass.⁷⁰
- Per the American Society of Landscape Architects, “green infrastructure” can help protect communities from natural disasters, including drought.⁷¹



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SOIL EROSION

Plants control soil erosion.

- Grass helps control erosion by slowing down water runoff. Water running off a sodded area will take 28-46 times longer than if the water was on five popular erosion-control materials. Grass slows down the water runoff; thus, less soil erodes.⁷²
- Turfgrass controls erosion through its natural, dense and fibrous root system, which holds soil in place.⁷³
- Tests show that a dense lawn is 6 times more effective than a wheat field and 4 times better than a hayfield at absorbing rainfall.⁷⁴
- Sediment losses from sodded areas are 8 to 15 times less than for tested man-made erosion control materials and 10 times less than for a straw covered area.



FIRE BREAK

Turfgrass is a natural and effective fire break.

- 1.8 million homes across 13 Western states are at "extreme or high risk" of damage from wildfires, and the cost to repair them is estimated at \$500 billion. 27 million additional properties in those states face some risk of damage and would cost about \$6.7 trillion to repair⁷⁵.
- Living grass is the best natural fire break. Healthy turfgrass can be a significant deterrent to wildfires and can help protect property.⁷⁶
- Green grass retards the spread of wildfires because of its low fuel value, and it provides a defensible space around structures where firefighters can work effectively.⁷⁷



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PLASTIC GRASS, ARTIFICIAL OR SYNTHETIC TURF

**Plastic grass is an environmental villain
and does not provide habitat or support biodiversity.**

- Younger Americans (ages 18-34) are more likely to have an artificial or synthetic lawn than those who are 45+.⁷⁸
- Putting plastic propylene sheets in place of a living lawn destroys urban habitat for birds, insects and animals. It is, in essence, plastic grass.
- Plastic grass – a petroleum product – is **not** more environmentally friendly than real grass.
- Plastic grass is hot. A 2002 Brigham Young University study revealed that synthetic-turf surface temperatures were 37 degrees higher than asphalt and 86 degrees hotter than natural turf.⁷⁹ A 2012 Penn State study found it not uncommon for temperatures to surpass 150 degrees and can reach up to 200 degrees.⁸⁰
- Plastic grass may not "use" water to sustain itself, but it must be cooled with water and washed off with water to remove dust, dirt and pet waste. The runoff of the dirty and unsanitary water contributes to water pollution. The L.A. Department of Water & Power attracted negative attention in September 2016 when it was discovered to be using water to clean artificial turf once a week to remove dog waste.⁸¹
- According to a New Mexico State University turfgrass expert, not only does artificial turf need to be irrigated multiple times a day to keep it cool, reflection of the heat from the turf also impacts surrounding buildings and grass.⁸²
- Plastic grass does not last forever and much of it is non-recyclable. Many recycling service providers will not accept artificial turf. According to the Association of Synthetic Grass Installers, surface fibers can be cut away from the backing and recycled, but the backing itself cannot be recycled.⁸³

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