



How can we improve the carbon footprint of our yards and gardens? The traditional tools and designs of American landscaping need to change to become sustainable, so let's take a look at the factors that are easy and harder to change at our own homes.

Small gas-powered engines of the type that power lawnmowers and leaf blowers emit about 242 million tons (<https://www.epa.gov/sites/production/files/2015-09/documents/banks.pdf>) of pollutants each year. Landscape irrigation is estimated to account for almost one-third ([https://www.gswsa.com/gswsa\\_public\\_site/userfiles/file/Outdoor\\_Water\\_Use\\_Fact\\_Sheet.pdf](https://www.gswsa.com/gswsa_public_site/userfiles/file/Outdoor_Water_Use_Fact_Sheet.pdf)) of all residential water use, totaling more than 7 billion gallons per day. More than half of that water may be wasted due to evaporation, runoff, or overwatering.

Our landscape designs are also to blame. A 1,000 square foot native garden uses 24,000 fewer gallons (<https://home.howstuffworks.com/lawn-garden/professional-landscaping/conserves-water-in-garden1.htm>) of water per year than the same amount of lawn. Waterwise gardens are clearly more sustainable than the average American landscape. But ripping out your existing landscape and replacing it with a bunch of natives might not be the most “eco”nomical thing to do.

## Good Changes

Some landscape design changes almost always make sense. Turfgrass covers more than three times (<https://www.isprs.org/proceedings/XXXVI/8-W27/milesi.pdf>) as much area as any food crop in the United States and accounts for up to 70% of residential irrigation (<https://www.newsdeeply.com/water/community/2017/08/09/city-wide-study-shows-how-much-water-urban-landscaping-really-uses>) needs. Replacing lawn with almost anything else is a safe bet that will pay off with improved sustainability. Perennial plants don't need to be mowed, and even nonnative varieties have much deeper roots ([https://www.canr.msu.edu/news/the\\_last\\_word\\_on\\_watering\\_perennials](https://www.canr.msu.edu/news/the_last_word_on_watering_perennials)) than turf, so they will need less water.

Installing a rain garden (<https://earth911.com/home-garden/how-to-create-rain-garden/>) — where appropriate — is a good idea. Designed to temporarily hold and soak in rainwater runoff that flows from paved areas, rain gardens work hard (<https://www.groundwater.org/action/home/raingardens.html>) in your landscape. They absorb nutrients, chemicals, and sediments from runoff and absorb 30% more runoff than lawn after a rainstorm. This results in less erosion and in cleaner water returning to natural systems.

Reconsider your exotic plantings, they may be pillaging the local ecosystem. Many invasive species are quite pretty, and gardeners often appreciate them because they thrive even under neglect.

Nonnative species are skilled at escaping the garden and creating havoc in the wild. They crowd out native species that local wildlife depends on for food and shelter and reduce biodiversity by forming monocultures. Obtain a list of natives from your local [county extension office](#) (<https://pickyourown.org/countyextensionagentoffices.htm>) of the species that are invasive where you live, and purge those plants from your garden.

## About Trees

Most gardeners long for full sun, but if your yard already has mature trees, it's usually best to [keep them](#) (<https://canopy.org/tree-info/benefits-of-trees/>). Native trees provide food and shelter for birds and wildlife, but even most nonnative species still use [much less water](#) (<https://nextcity.org/daily/entry/study-urban-lawns-los-angeles-water-conservation>) than lawns and serve as important [carbon sinks](#) (<https://earth911.com/inspire/easy-carbon-sequestration-you-can-do-yourself/>).

Trees contribute to cleaner air and water and improve soil health. Your trees may also be [cutting your cooling costs](#) (<https://earth911.com/eco-watch/energy/landscaping-techniques-to-cut-home-energy-use/>) in summer and providing a windbreak in winter. Homes with trees sell faster and at higher prices, and there is even evidence that trees have [mental health](#) (<https://forestrynews.blogs.govdelivery.com/2018/11/07/improve-mental-health-with-exposure-to-trees-and-nature/>) benefits.

Exceptions would be in the case of [invasive](#) (<https://www.thoughtco.com/seven-common-invasive-tree-species-in-north-america-4108964>) tree species that damage native habitats — such as Russian olive in the desert — or species that are truly inappropriate for the conditions — like palm trees in a cold climate. These will require excessive inputs of water and chemicals to survive.

## Know Your Place

For many of us, the word “garden” evokes the traditional English cottage garden, and the Victorian era is the source of most contemporary garden designs. But a water-conserving landscape will look different depending on where it is located. It might be a [native prairie garden](#) (<https://www.gardenia.net/gardens/garden-styles/prairie-and-meadow>) in the Midwest, a cactus-filled [xeriscape](#) (<https://gardenshop.dbg.org/desert-landscape-school-a-guide-to-desert-landscaping-and-maintenance.html>) in the Southwest, or a wooded shade garden in the Pacific Northwest. Before you install your new landscape, the [WaterSense Water Budget Tool](#) (<https://www.epa.gov/water-sense/water-budget-tool>) can help you plan for climate-appropriate water efficiency.

If the soil and microclimate where you live have been altered too dramatically, you might have more

success growing [nativars](https://earth911.com/home-garden/garden-heavy-lifters/) (<https://earth911.com/home-garden/garden-heavy-lifters/>) than restoring a true native habitat. Also, many naturalistic landscapes can look weedy to untrained eyes. If the natural ecology of your region doesn't suit your taste (or your homeowners' association) you might choose to change only parts of your landscape, such as [reducing lawn size](https://earth911.com/home-garden/grass-lawn-alternatives/) (<https://earth911.com/home-garden/grass-lawn-alternatives/>). Or you might make gradual changes, replacing ornamentals with select natives as individual plants die.

## Maintenance

Once *established*, native and drought-tolerant plants may be able to survive on rainfall alone. But transplants can take three years or more to become well established, and during that time they will require [extra water](https://www.mercergov.org/Files/Watering%20Your%20New%20Plants.pdf) (<https://www.mercergov.org/Files/Watering%20Your%20New%20Plants.pdf>) — often several times per week during dry seasons. Unless your landscape is extremely inefficient, such as a large lawn surrounded by beds of annual flowers, maintaining the framework of your existing garden might be less resource-intensive.

Establishing a new landscape is also costly. Whether you keep your existing landscape for aesthetic and economic reasons or replace it with something more sustainable, how you maintain your garden matters as much as what you plant. Avoid the use of [gas-powered machines](https://earth911.com/home-garden/gas-powered-garden/) (<https://earth911.com/home-garden/gas-powered-garden/>), use [mulch](https://earth911.com/home-garden/mulch-101-healthy-garden/) (<https://earth911.com/home-garden/mulch-101-healthy-garden/>), practice wise [watering](https://earth911.com/home-garden/tips-for-watering-your-garden-during-the-drought/) (<https://earth911.com/home-garden/tips-for-watering-your-garden-during-the-drought/>), and avoid [toxic weedkillers](https://earth911.com/home-garden/all-natural-weed-killer/) (<https://earth911.com/home-garden/all-natural-weed-killer/>), [pesticides](https://earth911.com/living-well-being/the-problems-with-pesticides/) (<https://earth911.com/living-well-being/the-problems-with-pesticides/>), and chemical fertilizers.

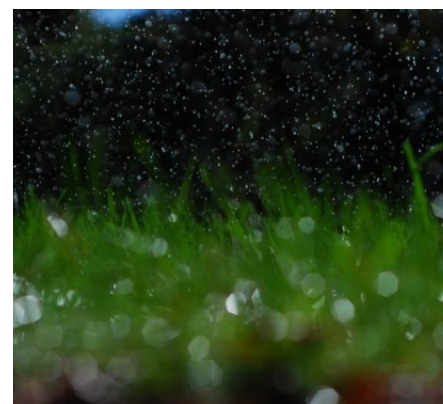
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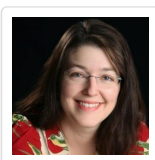
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Gemma Alexander has an M.S. in urban horticulture and a backyard filled with native plants. After working in a genetics laboratory and at a landfill, she now writes about the environment, the arts and family. See more of her writing here (<https://gemmadeealexander.com/>).

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