In many landscapes, the flower reigns as the primary indication of good maintenance. Bright blooms smile at entrances, walkways, and the fronts of buildings, proudly proclaiming, “This space is well cared for.”

The plants we casually call “flowers”—those whose above-ground growth dies back in fall—are technically known as herbaceous plants, and there are many types in addition to those that boast colorful blooms. They include perennials that return year after year, annuals that live for only one year, slender-leaved grasses, and bulb plants whose fleshy roots produce short-lived but flashy flowers.

Herbaceous plants do not have woody parts like trees and shrubs do. Herbaceous plants are not just pretty faces. They perform many environmental functions as well. For thousands of years, our native herbaceous plants evolved together in diverse, self-sustaining plant communities. They cleaned the air and water. They created habitat and food for wildlife. Their roots enriched the soil and prevented erosion.

But in the last 200 years, our native flowering plants have been removed from the landscape—first due to farming, then to widespread urban development. Plus, colorful new herbaceous plants from other parts of the world have been introduced. While many are well-suited to our climate, others need fertilizers, pesticides, and frequent watering to keep them looking attractive. This is no small matter. For example, 20 times more pesticides are applied to lawns and gardens than to farmland. What’s more, landscape irrigation (including garden beds and lawns) consumes more than 7 billion gallons of drinking water each day, according to the Sustainable Sites Initiative.

There’s hope, though. Smart land managers can create aesthetically pleasing garden beds that are also eco-friendly. Just as you remodel the interior of a home or building, you can rethink plantings to achieve a better-functioning, long-lived, sustainable landscape. The sustainability goal for this chapter is think beyond the flower to create healthy gardens. This means putting the right plant in the right place, taking into account that your property may have many types of soil, sun, and moisture conditions. And, in addition to blooms, rely on the size, color, and texture of leaves to meet traditional aesthetic desires. This could even mean growing edible plants, which provide people an even more tactile (and tasty) connection to the landscape.

THE VALUE OF SUSTAINABLE GARDENS
So why should you make the switch to eco-friendly plants? Here are the three top reasons:

**Beauty benefits**
A landscape filled with well-suited flowers, grasses, and other plants provides natural beauty and enjoyment for all who see it, forging a true connection to nature. By planting the right plants in the right places, garden beds and borders remain healthy and colorful, even during the hot, dry periods of summer. By planting perennials instead of annuals, you can enjoy plants that have four seasons of interest, providing an attractive landscape all year long. And by including a high proportion of native plants, the landscape attracts beautiful songbirds, butterflies, and other beneficial insects.
Chapter 6 Herbaceous Plants: 
Help Them Live Long, Healthy Lives

Cost savings over the long-run
Landowners who invest in garden beds filled with plants well-suited for their growing conditions can enjoy cost savings over the long-run. Even by redesigning a portion of the landscape each year, you will start to enjoy the benefits of sustainable landscaping. For one thing, you'll plant once and enjoy the results for many seasons. And after the new plants are established, you'll need to water less, fertilize less, and weed less, translating to fewer visits from your landscape company and a smaller water bill.

Environmental benefits
When you look beyond the flower, you consider other qualities that provide environmental services. For example, rain gardens or swales reduce the impact of heavy rains and help filter out pollutants before they drain into a pond. Well-selected herbaceous plants work with nearby trees, shrubs, and adjacent natural areas to provide food and shelter for wildlife. In addition, herbaceous plants that have substantial root systems help to anchor the soil and prevent erosion.

Learn More:
Sustainable Sites Initiative: http://www.sustainablesites.org/vegetation/

COMMON HERBACEOUS PLANT CHALLENGES IN LARGE LANDSCAPES
There’s too much focus on the flower
After decades of planting the same impatiens and marigolds, some issues emerge. Maybe these sound familiar? You spend too much money planting annuals in the spring, watering them in the hot summer, digging them up in the fall, and replanting the following year. You may be maintaining (or trying to maintain) a 30-year-old, sun-loving landscape plan under the shady canopy of maturing trees. Or perhaps the desire for a consistent, uniform landscape is dictating a limited palette of high-maintenance plants.
To escape these problems, begin to appreciate the other ornamental attributes of plants, such as leaf size, color, and texture. (See Keep It Simply Sustainable!) By incorporating attractive plants that thrive in your site’s growing conditions, you can reduce the cost of maintaining your beds and borders. The horticulture industry has developed disease-resistant, hardy plants and has rediscovered native plants. Visit a local garden center and you'll find more variety than ever.

It’s difficult to find a landscape contractor that understands sustainability
Even if the sales staff can “talk the talk,” the crew may not “walk the walk.” A good company keeps up with the best plant health care practices, prioritizes the use of native and other eco-friendly plants, knows that the best landscape practices work with nature, not against it, and trains its employees accordingly. Do your due diligence to be sure a landscaping contractor knows how to analyze and work with the landscape’s conditions and has experience working with native plants. Otherwise, look elsewhere.

Invasive plants may be lurking
One hundred years ago, every school child was taught plant identification. Unfortunately, over the decades, this skill has almost gone extinct in the general population. Today, many landscapes harbor misbehaving plants, such as garlic mustard and purple loosestrife. These invasive species escape into natural areas and cause havoc by forming dense colonies that choke out beneficial plants and wildlife. A plant inventory is the answer. Hire a knowledgeable landscape design professional to inventory your current mix of plants and their suitability for your site's growing conditions.
In any given year, there’s not enough money to do what’s right
Reinventing your landscape does take an initial investment, true. But there are ways to phase the project so your budget is not overwhelmed. The most important step is the initial one of incorporating landscape replacement into your operating budget. The costs can be spread out over time so they are palatable for stakeholders. Redo a portion of the garden beds one year, then tackle another section the following year...you get the picture. Eventually, reduced annual maintenance costs will help you recoup some of your investment.

Landscape users may believe native plants are weedy
When most people think of native plants in a landscape, they envision a prairie with tall grasses that they'll have to wade through to get to their car every day. Actually, it's a misperception that native plants always look wild. On the contrary, they can be used to create manicured, maintained garden beds. Plus, native plants are the ultimate easy-care plants. Because they are extremely well-suited to our climate, growing conditions, and annual rain patterns they need less attention than exotic annuals to look great.

Over the years, trees grow or die, changing the sun, soil, and moisture conditions of a site
What was once a sunny area is now shady, so sun-loving plants below don’t flower any longer. Or a tree came down, and the sun has burned up the hostas. Does this sound familiar? Whenever site conditions change, it's time to re-evaluate the plant mix.

Plants near driveways, roads, parking lots, or sidewalks struggle or continually die and need to be replaced
Road salt is an enemy to most plants, even so-called “salt-tolerant” plants. No plant can survive for long in that harsh environment. If possible, choose more eco-friendly treatments, such as sand, beet juice, and non-sodium chloride-based products.

Perennials die without attention
Why do all your hostas look like donuts, where the centers have died out? Because even old standbys that we think of as dependable, like hostas, need maintenance to stay healthy and attractive. In recent years, many kinds of daylilies have begun to develop diseases. This is an unfortunate consequence of overuse. Replace poorly performing daylilies with disease-resistant plants. In the case of “donut” hostas and other perennials, remove them, divide them into several plants, and replant them with plenty of space around each one.

No matter how much you water, plants die
It surprises many people, but the number one cause of plant death is...overwatering! Check your watering cycle and the condition of your irrigation equipment. Sprinkler heads may not be functioning or be situated in the wrong locations. And be sure to turn off equipment when it rains.

Your landscaping was an afterthought or designed years ago
Some property developers are good at designing buildings, but the landscaping around them? Not so much. Landscaping may be an afterthought, designed to look full and lush to sell the property but without regard for how plants would grow and change over the years. Plus, when your property was designed 20 to 40 years ago, plant knowledge and best practices were still evolving. Just as you replace outdated interior decor, it’s time to freshen up your original landscape with a new design plan. The industry standard is to have a design professional evaluate your landscape every three to five years.
Chapter 6 Herbaceous Plants: Help Them Live Long, Healthy Lives

There’s a demand for color all the time
The reasoning goes, if we are paying dues/taxes/the landscape contractor’s bill, we expect something for our money. That “something” often translates to exuberantly colored beds of annual flowers, perfectly balanced and always blooming. But what happens when two sun-loving petunia beds flank a sidewalk…and one of them is in shade? Or the downsputs floods one bed, while the other is perpetually parched? Dead flowers never look right, no matter how well they’re balanced. It’s time to let go of the matchy-matchy aesthetic and embrace the right plant in the right place. This is the concept that different site conditions demand different kinds of plants. A good landscape designer can perform a season-by-season site analysis to determine the right plant mix for your site. A garden with a variety of perennial plants can provide color and beauty throughout the growing season.

THINK BEYOND THE FLOWER: IMPLEMENTATION
Garden beds can look interesting and beautiful all year long—without draining your bank account. In a sustainable landscape, tall, elegant grasses; plants with attractive color, shape, and form; and even sculptures can create show-stopping focal points where you need them. Here are steps for revamping your gardens to include the sustainable use of herbaceous plants.

1. Start with the soil. Get a soil test to learn what yours is made of (clay, loam, sand), its pH (acidity or alkalinity), and what kinds of nutrients it contains. Soil can vary from place to place, so be sure to test many different areas of the property. Soil at the back of the property will be different from soil near a pond and different still from soil near a parking lot. With results in hand, choose appropriate plants that thrive in your kind of soil, and decide what nutrients, if any, you may need to add. If you are planning to grow edible plants, you may need to substantially improve the soil or even create raised beds if the soil contains toxins.

2. Analyze your site. A good landscape designer can give you a current inventory of your plants. They can help you learn the sun and shade conditions and understand the effects of topography and wind on plants. For example, plants with shallow roots don’t do well on sloped areas.

3. Start small. Begin with small changes that will garner the biggest cost savings right away. This might mean...
   - Replacing a poorly functioning patch of lawn or a flower bed near a downsput with a swale or rain garden filled with water-loving plants. They will absorb excess water, prevent soil erosion, and reduce the amount of nutrients that get washed into a pond.
   - Designing a shade garden filled with plants that don’t need a lot of sun in an area of dense shade where grass or sun-loving annuals won’t grow. Gravel, a tasteful statue, or other objects can provide added interest.
   - Applying mulch underneath trees to give them a finished look and protect them from mowers and string trimmers. (Just be sure to avoid volcano mulching).
   - Planting a perennial ground cover on sloping land, where annuals tend to wash away or where mowing is difficult.
4. **Allocate appropriate funding.** The creation of new garden beds or remodeling of old ones could be included in your budget or reserve study process. Be sure to take into account the expected lifespan of landscape elements. Understand that you may have to spend money up front to save money over the long-term.

5. **Hire the right professionals.** Before you let a landscape company design a garden bed, check their sustainability “cred.” Will they choose a variety of low-maintenance perennials that include natives—or do they specialize in thirsty annuals that must be replanted next spring? Will their recommended plants minimize care and watering? Can the plants cope with long droughts? Will they group together plants with common growing needs to simplify maintenance?

**Learn More:**

- Illinois Landscape Contractor Association - Sustainable Landscaping Group: [https://www.ilca.net/sustainable_landscaping.aspx](https://www.ilca.net/sustainable_landscaping.aspx)
- PLANET (Professional Landcare Network): [www.landcarenetwork.org/index.cfm](http://www.landcarenetwork.org/index.cfm)

6. **Formulate a long-term maintenance plan.** Your landscape is living and dynamic—it is never “done.” Conditions change over time. So plan accordingly. Have the landscape evaluated by a professional every few years and plan to make upgrades as trees cast more or less shade and new structures such as parking lots are built.

**COMMUNICATING AND ADDRESSING CONCERNS**

Of all the natural elements surrounding us, the flower is the one we seem to connect with the most. We delight in seeing bright beds of yellow marigolds near entrances. We lovingly plant purple petunias in containers, and bring cut flowers inside to enjoy.

But despite all the emotional attention we lavish on flowers, it’s difficult to meet their growing needs. So when gardens look parched or weedy, a landscape’s users may let you know about it. A sustainable landscape minimizes problems like those, but it has issues of its own. Specifically, a sustainable landscape may incorporate flowers that people aren’t familiar with. Winning over the hearts and minds of your landscape’s users may take some time, but you can help them appreciate eco-friendly gardens by keeping in mind these tips:

**Talk about the needs of plants**

When plants die because they are poorly matched to the growing conditions, help people understand that plants are like us. Just as we need water, proper nutrition, and supportive neighbors and family to thrive, so do plants. Each type of plant needs specific amounts of moisture, soil, and sunlight. When people balk at the water bill or complain about the dead flowers in the garden, it’s the perfect opportunity to talk about switching to sustainable plantings that are better suited to your property’s growing conditions.
Stress the need to hire knowledgeable and trained professionals
Designing successful gardens takes skill. If you have your "lawn guy"—who specializes in turf grass but not much else—try to plan a well-functioning perennial garden, you'll get what you pay for. When incorporating native plants, hire someone who has experience designing with and maintaining them.

Help people see the beauty in low-maintenance plants: cost-savings
Some people may resist an unfamiliar "natural-look" aesthetic. Promote the idea that they can save money by choosing perennials that need to be planted only once. They'll also save money on water and maintenance.

Remind them that patience is a virtue
Some people lack the patience to wait for planting beds to get established. It's hard to teach patience, but you can stress the ultimate rewards: lower maintenance bills over the long haul and year-round beauty, just to name a few. Plus, it only takes a year or two! You may find that the more educated people are, the most interest they'll develop in a sustainable approach, and the more ownership they'll take in the process.

Stress the environmental benefits
Planting the right plants can actually improve soil quality over time. Well-selected plants can halt soil erosion, clean water before it enters your pond or nearby waterways (see Chapter 4: Ponds), and help absorb water in places usually covered in puddles. In addition, deep-rooted and woody plants and the soil supporting them store carbon, which helps to fight climate change.

RESOURCES ABOUT HERBACEOUS PLANTS

**Sustainable Gardening**
University of Illinois Extension - Gardener's Corner: [http://urbanext.illinois.edu/gardenerscorner/](http://urbanext.illinois.edu/gardenerscorner/)
Sustainable Sites Initiative - Landscape for Life: [http://landscapeforlife.org/](http://landscapeforlife.org/)

**Integrated Pest Management**
Iowa State University - Pest Management and the Environment: [http://www.extension.iastate.edu/PME/IPM.html](http://www.extension.iastate.edu/PME/IPM.html)

**Native Plants**

**Edible Gardening**
Chapter 6 Herbaceous Plants:
Help Them Live Long, Healthy Lives

GLOSSARY

Acidity: expressed in pH, this is a measure of soil or water. Its opposite is alkalinity (see definition below). Most plants thrive in average soil (around 7.0 pH), but if the soil is highly alkaline (more than 8.0 pH) or highly acidic (less than 6.5 pH), then only certain kinds of plants will thrive.

Aesthetic: the look of a landscape. A formal aesthetic might be characterized by shaped hedges or mowed and trimmed lawns. A natural aesthetic is looser, with broad swaths of plants growing in their natural shapes.

Alkalinity: expressed in pH, this is a measure of soil or water. Its opposite is acidity. Most plants thrive in average soil (around 7.0 pH), but if the soil is highly alkaline (more than 8.0 pH) or highly acidic (less than 6.5 pH), then only certain kinds of plants will thrive.

Annual: usually refers to brightly colored flowers originating from warmer parts of the world. They are planted in the spring and die by winter.

Biodiversity: variation in the kinds of plants, animals, and other organisms living on the land. The higher the biodiversity, the more healthy the land is deemed to be.

Bulb: only certain plants have them. A bulb is the underground part of a plant that looks like a small onion and stores the plant's food. Spring-flowering bulbs are usually planted the previous fall. After flowering, the leaves should be left on the plant so they can make food, which gets stored in the bulb for the following year. Some bulbs don't re-bloom the next year.

Herbaceous: a plant whose leaves and stems die down to soil level at the end of the growing season. These include perennial and annual plants (see definitions).

Environmental Services: the beneficial, often measurable, functions by plants, animals, and other elements in nature. Trees capture and store carbon dioxide, prairie plants absorb storm water so it doesn't overwhelm our storm sewers, and other plants can filter pollutants out of water to keep a pond healthier.

Evolve: develop over time in the process of evolution by natural selection. Plants and animals adapt to the specific conditions in their environment or they die out—or sometimes move to another place that has conditions to which they are better suited.

Grass: a family of plants with long leaves. Turf grass is commonly used in lawns. There are many other useful and beautiful grasses, including ones native to the Midwest, such as the tall grasses of the prairie (see definition below).

Ground Cover: a short plant that spreads through specialized stems called leaders, specialized root parts called rhizomes, or clumping. Ground covers are often used as a low-maintenance way to provide a patch of green.

Invasive Species: plants or animals that cause economic or environmental harm or harm to human health. These species can sometimes be native but most often are non-native.

Landscape Designer: a professional that prepares design plans and reviews construction, mainly for residential and multifamily properties. Look for membership in the Association of Professional Landscape Designers, the Illinois Landscape Contractors Association, or the American Society of Landscape Architects.

Mulch: a layer of material, usually natural, that is applied over soil to retain moisture, moderate soil temperature during the winter, and add nutrients to the soil.

Native: originating from the local environment; not imported from other parts of the country or other continents.

Perennial: a plant that lives year after year. Its opposite is annual (see definition above).

Pesticide: a substance that kills any kind of pest, including weeds, diseases, and undesirable insects or animals.

pH: a measure of the acidity or alkalinity of soil or water. Interestingly, scientists argue about what the p and H stand for. Most plants thrive in average soil (around 7.0 pH), but if the soil is highly alkaline (more than 8.0 pH) or highly acidic (less than 6.5 pH), then only certain kinds of plants that like that condition will thrive.
Chapter 6 Herbaceous Plants: Help Them Live Long, Healthy Lives

**Prairie:** a large meadow in which specific types of native plants live. You may be familiar with some of these plants, such as tall grasses and sunflowers. Prairies covered most of Illinois and Iowa and the rest of the Midwest until European settlers plowed them up to create farmland. Their soils, created by thousands of years of fires and dead plant parts, were deep and rich.

**Rain Garden:** usually a depressed area in the soil that collects rainwater, either from the sky or building downspouts. A rain garden is planted with water-loving plants that absorb the excess water.

**Raised Beds:** garden areas that are enclosed by wood, concrete, or rock frames where the soil is built up to 3 or 4 feet high.

**Shade Garden:** a designed area filled with plants or other features, such as sculptures, that receives less than four hours of direct sun a day.

**Soil:** often referred to as “dirt,” soil is the medium for most plant life. It is made up of sand, clay, and loam, as well as organic matter (decaying leaves, tiny soil organisms, etc.).

**Species:** a group of organisms capable of interbreeding and producing fertile offspring. A Red-tailed Hawk cannot breed with other species of hawks, such as a Red-shouldered Hawk or a Broad-winged Hawk.

**Swale:** a natural or manmade ditch designed to slow and capture rainwater, rather than letting it run off the land. The water slowly percolates into the ground.

**Volcano Mulching:** a common but unhealthy practice of piling up mulch around the base of a tree. Mulch should be applied at a depth of 3 to 4 inches over the root zone of a tree, but it should not touch the trunk or bark.

The Four Seasons Garden at The Morton Arboretum features a variety of perennial plants surrounded by permeable pavement.

A swath of low-maintenance Siberian Bugloss can look stunning in spring.
An area of lawn shaded by grown trees could be replaced by a more sustainable shade garden, mulch or ground cover. Photo courtesy of Beth Corrigan

Keep It Simply Sustainable!

Talk About Texture

Sweaters have texture. Carpets have texture. Food can have texture. But do plants have texture? They sure do!

In this case, texture, or surface quality, isn’t touched or tasted; it’s seen from the sidewalk or watched from a window. Plant texture is often defined by leaf size: coarse (big), medium, or fine (small).

The art of sustainable landscape design uses leaf texture and color, bloom color, and plant height.

Escaping the monotony of homogenous annual beds, sustainable design harnesses the rich diversity in nature to create harmonious and often stunning gardens.

Plants Not to Plant

Be aware of how some plant species can go awry.

According to the National Invasive Species Council, an invasive species is “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.”

In other words, invasive species are so successful that they push everything else out. Nothing else grows.

Illinois and other states, as well as the federal government, keep official lists of invasive plants. Know the ramifications of what you plant.

Planting a Prairie

If you have the space, planting a prairie can be a beautiful, rewarding alternative to lawn. A broad swath of native prairie plants attracts birds and butterflies, improves the soil, and can help control storm water.

Prairies are low-maintenance, but they’re not no-maintenance. Here’s what they’ll generally need after the first year:

- Controlled burning or mowing
- Digging out or pulling certain weeds
Chapter 6 Herbaceous Plants:
Help Them Live Long, Healthy Lives

- Spot treatment of certain tough weeds with herbicide

If you happen to have the space for grazing animals, like elk or bison, you can let them do some of the maintenance for you!

Edible Gardening
Sustainable landscaping can also include edible gardening. Whether you designate an area dedicated to vegetables, create a raspberry hedge, or tuck edibles into established garden beds, this form of gardening can be an enjoyable way for people to connect with nature.

Schools have long supported demonstration gardens for children to learn about the sun, soil, and plant life. Park districts, workplaces, and residential communities are also providing areas for people to work side by side and enjoy the fruits of their labor.

A REVIEW OF IMPORTANT INFORMATION
Sustainable landscaping can save you money:

- less watering
- less fertilizer
- less weeding

Native Plants have deep fibrous roots that absorb water, anchor soil and prevent erosion.

You should hire a knowledgeable professional with experience working with low maintenance plants and sustainable practices.

A New Perspective
While you should consider your aesthetic goals, enhance the overall function of the landscape by working with natural processes. You’ll achieve a better working landscape over the long-run.

See more Sustainability Perspectives in the Introduction.