From Acorns to Oaks
Kristina Jensen, Nebraska Statewide Arboretum

“The creation of a thousand forests is in one acorn.” Ralph Waldo Emerson

To grow plants from seeds, you don’t need to go to the local nursery and buy a colorful packet. A little knowledge can create a rewarding do-it-yourself experience.

One plant that is relatively easy to start from seed is the oak. Acorns mature in early fall in Nebraska. You can tell the seed is ripe when the outside changes from green to yellow, brown or black and the caps can be easily removed. Acorns can then be plucked off the tree or picked up from the ground soon after falling. It’s important to note that acorns left on the ground for several days begin to dry out and become a food source for insects and wildlife.

After collection, acorns should be soaked in water overnight to rehydrate any dry seeds. Floating acorns, along with any other debris, should be skimmed off the top. The remaining sunken acorns are the most viable and pest-free.

Next, lay out the healthy acorns in a single layer on a clean surface and allow seeds to dry about 30 minutes to reduce molding. Acorns should then be transferred to a sealable plastic bag and placed in a refrigerator set at 37 °Fahrenheit (F). This cold storage—called stratification—mimics the acorns’ need to go through a winter in order to successfully germinate. Most acorns need at least 60 days of stratification (only white oaks don’t require this). After stratification, they can remain in the refrigerator until warmer weather permits outside sowing; or you can sow them inside if you have access to a greenhouse or other area...
with temperatures of 86 °F during the day, and 68 °F at night. Sixteen hours of sunlight or artificial light is also necessary.

When planting the acorns, select a pot at least 5” deep to accommodate the taproot. Fill the pot with a general purpose potting soil, leaving 2” at the top. Place the acorn on its side in the pot and cover with 1” of potting soil. Water the acorn until moderately moist, with a few drips coming out the bottom of the pot, and continue watering every few days until it has sprouted and can be planted outside after the danger of frost has passed.

Select a sunny location with enough room for the tree to grow. Dig a hole about 1’ wide and the same depth as the pot. Plant the seedling slightly higher than it sits in the pot. Support the seedling while carefully adding soil around the roots using moderate compaction. Add 2-3” of wood chips 18” around the tree, keeping the mulch away from the stem. Water the seedling well, and do so every week in its first year if rainfall is less than 1” a week. A wire cage is usually a good idea to protect a young seedling from things like wildlife and lawnmowers.

Oak Facts:
- Oak is the common name for the tree. It goes by other names in other parts of the world. Scientifically, it's known as being in the *Quercus* genus.
- There are about 500 species of oaks in the world. About 70 of these are native to the United States, with 7 being native to Nebraska.
- *Quercus* is the largest genus of hardwood trees and shrubs native to the United States. This includes both deciduous and evergreen species.
- Oaks native in Nebraska are: white oak (*Quercus alba*), bur oak (*Quercus macrocarpa*), blackjack oak (*Quercus marilandica*), chinkapin oak (*Quercus muehlenbergii*), dwarf chinkapin oak (*Quercus prinoides*), red oak (*Quercus rubra*) and black oak (*Quercus velutina*).
- Oaks have many valuable uses including: furniture, construction timber, wildlife habitat and food, watershed protection and ornamental plantings.
- Oaks have deep growing roots called taproots. Taproots help the tree withstand drought by reaching water far below the surface of the ground.
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Plains-Hardy Shrubs for Fall Color
Jim Locklear, Nebraska Statewide Arboretum

Autumn is a wonderful season in Nebraska, when our prairies take on their subtle end-of-the-summer glow. But, truth be told, most of us still desire the bold show of color that other parts of the country enjoy in the fall, and our thoughts naturally turn to trees like maples and gingko and sweet gum.

Shrubs are sometimes overlooked as a source of fall color, but they have a lot to offer, particularly here in Nebraska where our cold, heat, dryness and wind may limit the palette of trees we can use. Here is a sampling of plains-hardy shrubs with great fall color.

Black chokeberry (Aronia melanocarpa) is a medium-sized shrub (height 4-6 ft.; spread 3-5 ft.) with multiple seasons of interest. Starting with showy clusters of white flowers in early summer, followed by dark purple fruits greatly appreciated by robins, this adaptable shrub closes the growing season with beautiful wine red fall foliage. Black chokeberry is adaptable but prefers moist, well-drained sites in full sun to part shade and is most effective when massed in the landscape and allowed to follow its natural tendency to spread by suckering. It was selected as the shrub of the year by the Nebraska Nursery & Landscape Association in 1998.

As a relative of the immensely popular burning bush (Euonymous alatus), it should come as no surprise that eastern wahoo (E. atropurpureus) has great fall color. This North American native grows as a small tree in the southern part of its range, and as a large shrub (height 6-15 ft.; spread 4-12 ft.) here on the Plains. The bright red of its fall foliage is amplified and extended by abundant clusters of pendent, scarlet fruits that persist after the leaves have fallen,
providing color even into mid-winter. Eastern wahoo is effective as an accent plant or massed wherever a bold, surprising splash of color is desired. It prefers deep fertile soils in full sun to part shade.

The American Southwest has a wealth of shrubby oaks, but Gambel oak (Quercus gambelii) is one of the few tough enough to make it on the Upper Plains. Forming thickets in its natural habitat on the foothills and lower slopes of Rocky Mountains, Gambel oak makes an attractive, large shrub (height 8-15 ft; spread 10-15 ft.) in the landscape, with dark green foliage that reminds you of miniature bur oak (Q. macrocarpa) leaves. Like most oaks, its fall color is often subtle and varies from individual to individual, but nice burgundies and orangish-reds can be seen in wild populations. Its small acorns are a favorite of blue jays. Gambel oak is drought tolerant and grows best in full sun to part shade.

While America’s native viburnums occur most commonly in the eastern United States, rusty blackhaw viburnum (Viburnum rufidulum) flirts with the edge of Plains. One of the most drought tolerant species in the genus, rusty blackhaw viburnum (height 9-15 ft; spread 15 ft.) has neither the showiest floral display nor heaviest fruit production. Still, noted horticulturist Michael Dirr ranks it as one of his favorites. The glossy dark green, leathery foliage is reason enough to grow it; the rich burgundy tones of its fall foliage is icing on the cake. It grows best in full sun to part shade.
Kids used to be told “Go outside and don’t come home till sunset.” With that prompt, all the nearby creeks, fields, forests, parks and gardens were transformed into special and wondrous places where a child’s imagination could be acted out.

But with television, computers, video games, organized activities and continuous fears of “stranger danger,” kids find themselves spending most of their time indoors. Recent studies have linked an increase in childhood obesity, ADD symptoms and childhood depression to this phenomenon and shown that time in nature can actually relieve some of these symptoms. One step of re-connecting kids with nature is creating and preserving meaningful nature experiences for them close to home.

Our yards have become increasingly manicured; with tidy lawns, carefully pruned shrubs and limbed-up trees all designed for adult aesthetics. By looking through a child’s eye, and make a few inviting changes, yards that were once “off limits” can become an inviting place for children to explore nature—and it doesn’t have to be difficult. Instead of buying that box-store swing set that a child quickly outgrows, use these guidelines to create a more lasting play environment.

While your kids are young, give up your notion of a perfectly tidy landscape—especially a highly manicured lawn and the chemicals it takes to make it look that way.

Plant a diversity of shrubs, perennials and trees that will encourage wildlife, including pollinators such as birds, butterflies and insects.

Stay away from poisonous plants when you have young children, like yew and monkshood.
Allow “rough-edges” that aren’t manicured. Areas planted as a mini-prairie, wildflower gardens or un-mowed areas of lawn work well for play and imagination. Give children spots of their own to dig, plant, build and play.

Instead of pre-built play houses or swing sets, give children materials to build their own. For young children, create the structure’s outline and let them create their own walls out of blankets or sticks. Let older children build the whole thing. Forts don’t have to be built in trees to be magical places.

Learn to garden together. Gardening can teach skills like patience and stewardship, and they build self-esteem.

A garden doesn’t have to be big to be effective. If your neighbor has children, perhaps share a plot of ground together to encourage teamwork and sharing.

Most kids can identify exotic plants such as a giant sequoia or palm tree, but not the plants found in their own state, like little bluestem or oak trees. Use native plants wherever possible. These plants make better habitat for wildlife and require little maintenance. (A recent study found that most children could identify 100 corporate logos but less than 10 plants native to where they live.)

Add loose parts—sticks, branches, seeds, rocks and other objects that are movable and can be used in imaginative play.

Use sensory plants in your yard. Children love plants that have interesting scents, textures, colors and smells.
Prairie Dropseed, an Elegant Prairie Grass

Bob Henrickson, Nebraska Statewide Arboretum

Prairie dropseed, *Sporobolus heterolepis*, is one of the most elegant prairie grasses for the landscape, and also one of the most dependable. It has a graceful, weeping habit and shiny, ribbon-like leaves. The common name refers to the teardrop shape of the seed. The genus *Sporobolus* combines the greek "*sporos*" meaning seed with "*bolos*" for throwing, referring to the ease with which ripe seed are pushed from the base of the grass spikelet. The seeds are very nutritious and a favorite of some birds. There are nine species of dropseed native to Nebraska, two annuals and seven perennials. All are useful in restoration plantings but prairie dropseed, *Sporobolus heterolepis*, is the one that deserves a space in any modern landscape.

By mid-spring, several weeks earlier than other warm season prairie grasses, it forms a dense tuft of bright green foliage with a very soft appearance. The fresh new growth combines well with spring-flowering plants like dwarf iris and pasque flower. Though it takes several years to grow into a mature plant, it doesn't need dividing and doesn't die-back from the center. By mid-summer it forms an attractive, fountain-like mound of foliage up to 2’ high and wide. It is attractive enough for a formal garden or can be planted in large groupings for a prairie-style lawn or meadow garden. In late summer into fall, the foliage can turn orange to copper. Airy, open flower panicles high above the foliage emit a pungent fragrance when bruised, often described as a combination of cilantro and fresh popcorn. The scent is faint, but noticeable even when passing by a mass of seedheads on a cool, dewy morning.
This grass will reward you with a veil of abundant seedheads when planted in full sun and improved soils. It will grow well in part-shade and clay or sand, but flowering and fall color may be reduced. For plants growing in harsh, dry areas or during extreme droughts, provide extra water during the summer months to improve flowering. It makes an outstanding border plant and a complement to perennials with strong upright growth or those with broad foliage. I like to combine it with vertical plants such as shell-leaf penstemon or gayfeathers, or as a border plant to hide the bare legs of leadplant or prairie asters. The veil of mist-like flowers combines well with other mid to late summer bloomers like nodding pink onion and stiff goldenrod.
Getting Buggy about Summer
Justin Evertson, Nebraska Statewide Arboretum

When it comes to insects and spiders (arthropods) in the landscape, many people tend to think of little critters that cause problems and that we wish would go away. We think of stings, itchy bites, damage to plants/vegetables and the sheer creepiness of so many species. That’s too bad, because the vast majority of arthropods are either benign or are actually very beneficial to the world around us. It’s easy to enjoy butterflies, with their colorful wings and fluttering movements. We should also learn to enjoy many of the other arthropods in the garden. A few that are worth a closer look include:

**Goldenrod Spider.** The goldenrod spider (*Misumena vatia*) is a type of crab spider that exists throughout North America where it’s typically found waiting for prey on either white or yellow flowers. What is most fascinating about this spider is the ability of the female to change color from yellow to white, depending on the type of flower it inhabits. This camouflage can make the spider nearly invisible. A goldenrod spider can grow to about the size of a dime and is often found on daisies and goldenrod flowers, thus its common name.

**Soldier Beetle.** The soldier beetle (*Chauliognathus pennsylvanicus*) gets its common name from a bright red species in England that reminds people of a soldier’s coat. In Nebraska, the beetle looks quite similar to a lightning bug (and is related to it, but doesn’t “light up”). Soldier beetles are beneficial in two ways: they are predacious and eat many problematic insects including aphids, and they help pollinate flowers when feeding on nectar. Soldier beetles are found most often on yellow-flowering plants such as false sunflower, goldenrod and helenium. They are also quite common on milkweeds.

**Red Milkweed Beetle.** Just as its name implies, the red milkweed beetle (*Tetraopes tetrophthalmus*) is found on milkweed plants, typically the common milkweed (*Asclepias syriaca*). It is thought that the beetle, much like the monarch butterfly, gets a measure of protection from predators by feeding on the milkweed plant and thus becoming very distasteful. The beetle grows to about 1/2” long, possesses distinctive annulate (segmented) antennae and is often found in great congregations on host plants. Although its bright red and black-dotted markings give it an intimidating appearance, this beautiful insect is completely harmless.

Insects and spiders should not be thought of primarily as things to kill or avoid, but rather should be enjoyed and celebrated. As summer heats up, take time to explore the fascinating world of the insects around us. Check out the myriad forms colors, shapes and sizes. It’s truly an amazing world, and one which none of us can do without.
Coffeetree – Winter Revelations
Justin Evertson, Nebraska Statewide Arboretum

Winter - cold and gray and often foreboding. But also a good time to bundle up and get close to trees. For it is not until after the autumn drop of leaves, that the attractive bark and structural form of many trees are better revealed. One of the best trees for winter revelation is the Kentucky coffeetree (Gymnocladus dioicus). Native to the eastern third of Nebraska, coffeetree tells a winter story unlike any other tree.

Coffeetree has the largest leaves of any deciduous tree that grows in North America. The compound leaves, containing numerous small leaflets, can actually grow to two feet long and 18” wide. When these leaves fall, a tree of coarse texture is revealed. When young, the tree looks quite awkward and naked. In fact the scientific name Gymnocladus, means “naked branch”. But just like the ugly duckling that grew into the beautiful swan, so too does the coffeetree. Its mature winter outline is nothing short of magnificent. The plate-like bark of coffeetree is also quite attractive. In fact the low winter sun angle greatly accentuates its finer textures so that it appears almost like stucco applied to the tree.

Coffeetree is named for its hard seeds (the size and color of Milk Duds) that were roasted and ground by early settlers to create a coffee-like drink. The tree has both a male and female form and it is only on the female tree that its large but attractive seed pods are produced. The brown pods (5-7” long) typically hang on the tree through much of the winter, providing another identifying characteristic for the tree. The pods tell a fascinating story of evolution and survival. Over hundreds of thousands of years, the tree evolved with large herbivores such as rhinos, mammoths, horses and camels that long ago disappeared from the North American plain. Many of these “mega fauna” would have fed on the energy-rich seed pods in late winter and early spring. As such, the seeds had to be very hard to survive chewing and digestion so that they could sprout later in the fertile pile of the animal’s dung. Although the animals long ago disappeared, the tree managed to survive to help tell us the story of a forgotten time.

Coffeetree is one of the best trees for planting in Nebraska. It is long lived, it tolerates the worst of Nebraska’s weather extremes and it will grow in a wide variety of soils. The tree also develops a nice golden-yellow early fall color. The coffeetree is one of the last trees to leaf out in the spring and one of the first to drop leaves in the fall. This evolutionary adaptation helps it avoid late-spring and early-fall freezes and also makes it very resistant to ice-storm damage. Be patient in the spring, however. Many a coffeetree has been cut down by people assuming the slumbering tree was dead.
EarthKind™ Roses

By Kathleen Cue, UNL Extension, Douglas/Sarpy County

The rose is America’s most beloved flower. It also has the reputation for being persnickety, fussy, and downright difficult to grow. Disenchanted gardeners can now consider growing EarthKind™ Roses. Texas A&M University started the EarthKind™ Environmental Stewardship Program to promote landscape sustainability, utilizing tough rose varieties to launch the program. Roses deemed EarthKind™ are noted for their winter hardiness, disease resistance, drought tolerance and reliable flowering.

The most extensive testing of EarthKind™ Roses outside of Texas is at Haworth Park in Bellevue, NE. This joint venture between the Omaha Rose Society and UNL Master Gardeners of Douglas/Sarpy County began in the spring of 2007. Thirty rose varieties were planted and evaluations will take place over the next two years. Plans are underway to add 20 more varieties from the Northern EarthKind™ Research Program from the University of Minnesota.

Utilizing the EarthKind™ technique, 3 inches of compost is first worked into the soil. Roses are mulched with 3 inches of an organic mulch and given 1 inch of water per week for the first growing season. After that, the roses are on their own--no watering, no spraying and no fertilizing. This isn't to say these roses will never get black spot or aphids, but by giving special thought to the growing environment, the roses rebound quickly from pest problems. Thus far, some of the rose varieties that are performing beautifully include 'Barn Dancer', 'Belinda's Dream', 'Knockout', 'The Fairy', and 'Princess Verona'.

Haworth Park is located next to the Missouri River, just off Highway 370 in Bellevue. The EarthKind™ Roses test site is open to the public during normal park hours. An open house is planned for Friday, September 19, from noon to 5:00 pm.
Clematis is often called "queen of the vines," and for good reason. I can't think of another perennial vine that offers as much versatility in both form and color.

*Clematis* (KLEM-a-tis) is a member of the ranunculaceae (buttercup) family. One recent classification recognized 297 species of clematis, not to mention the numerous garden hybrids. Many gardeners think of clematis as vines that twine around a mailbox, trellis or arbor, producing masses of large, open-faced flowers. It's true that most clematis are woody deciduous climbing plants, however a few are herbaceous, dying back to the ground in winter and emerging from the base in spring.

The clematis plants I'm going to describe are the shrub or upright clematis that are great for individual specimens or allowed to weave as a groundcover through a shrub or perennial border. These shrubby plants have handsome, compound leaves and showy bell or urn-shaped flowers, followed by silky seed heads. I have found these bush clematis to be hardy, very easy to grow and long lived in the garden when provided full sun to part shade and rich, well-drained soil. The shrub clematis selections have become easier to find in the garden center and recent breakthroughs in breeding have greatly expanded the selection of these valuable yet overlooked garden plants. I will focus on varieties that are both available and suitable for the Great Plains garden.

**Fremont’s Clematis**, *Clematis fremontii*

A Plains native, this clematis grows like a herbaceous perennial, up to 20” high. Its thick, leathery leaves emerge in early spring, followed by attractive 1” urn-shaped flowers with thick blue to purple petals, blooming in May. Like most clematis species, it can take several years to grow into maturity. This long-lived gem is one of my favorite garden plants and combines well with other spring bloomers, such as pasque flower or prairie smoke. It was named in honor of John C. Fremont, the famous explorer of the American West and the first to catalog this plant in the 1840s.

**Ground Clematis**, *Clematis recta* ‘Purpurea’

Ground clematis can be trained to climb, but is usually left alone to crawl along the ground or tumble down a bank or low wall. It has attractive rosy-purple new leaves in spring that turn green as the season progresses. In late spring and early summer it produces masses of small, white, star-like flowers. The vanilla-scented flowers are followed by silvery seedheads.

‘Mongolian Snowflakes’

*Clematis*, *Clematis hexapetala* ‘Mongolian Snowflakes’

This shrubby clematis grows into a sprawling
3’ high mound of rich, dark green linear leaves with parallel veins. In late spring, it is topped with clusters of 1” white, fragrant flowers, soon followed by feathery, bright silver seed heads. Both the flowering stems and the seed heads are excellent as cut flowers, each with a long vase life. This drought tolerant clematis is easy to grow in any sunny, well-drained site. ‘Mongolian Snowflakes’ was selected for its copious clusters of larger 1 1/2” flowers.

‘Mongolian Gold’ Clematis, Clematis fruticosa ‘Mongolian Gold’
This is a dwarf shrub with woody stems up to 3’ high and dark green foliage. In late summer, the clumps are topped with 1” yellow, intensely fragrant, bell-shaped flowers. Its non-clinging stems can lean against a support or allowed to tumble over a low wall. It is very drought tolerant and cold hardy and grows best in full sun and well-drained soil.

Sugarbowl Clematis, Clematis scottii
This beautiful rock garden clematis is from the southern foothills of Colorado’s Front Range, yet its winter hardy to 30 below. This non-vining clematis is slow to get going, but is a long-lived perennial when grown in rich, well-drained soils and full sun to part shade. It has showy 1” deep blue, bell-shaped flowers followed by fuzzy seedheads.

Tube Clematis, Clematis heracleifolia var. davidiana
This China native is a tough clematis, with handsome, dark green leaves forming a 4’ high perennial shrub. In late summer it is topped with lightly scented clusters of small, pale blue flowers that open with recurved petals. This easy-to-grow clematis needs full sun or the blooms will be sparse and the plant will be floppy. The seedheads are also very attractive. The cultivar ‘China Purple’ has deep purple-blue flowers.

Bush Clematis, Clematis integrifolia
This is the most common herbaceous clematis, growing up to 2’ tall with nodding steel blue flowers over upright clumps with many stems. This summer bloomer needs full sun or the plant will be floppy. If you prune the plant back after flowering, it will bloom again in late summer or early fall. Look for splendid new cultivars of bush clematis hybrids, such as ‘Olgae’ with large blue, bell-like flowers; ‘Rosea’ with clear sugar pink bells; ‘Arabelle’ with deep blue-mauve 3” flowers; and ‘Hanajina’ with purple-pink bells.

Mrs. Robert Brydon Clematis, Clematis x jouiniana
I grow this hardy, easy-to-grow clematis as a groundcover between large shrubs. It’s a vigorous, non-clinging vine with many small bluish-white flowers in late summer to fall. In cold climates it dies back to the ground in winter and you’ll have to cut the stems back in early spring. Growing to 10’ it can be tied, allowed to cascade over a wall or used as a groundcover over an old tree stump.
As Nebraskans gear up to celebrate Wildflower Week (May 31-June 8) a key ally should also be considered for praise—the bee.

Bee pollination accounts for $15 billion in added crop value in the U.S. In more realistic terms, about 1 in 3 bites of food is in some way affected by honey bee pollination. And at a time when Colony Collapse Disorder and other stressors such as pathogens, parasites and the environment are plaguing pollination, bees need all the help they can get.

So what can the average person do? First, be conscientious of pesticide application. Only do so when necessary and try to avoid mid-day when bees are out foraging for nectar. Another thing is to plant good nectar sources. Here’s where the wildflowers come into play. Native plants have more nutritious pollen and nectar because they’ve been unaltered by breeders. And since they’re adapted to growing in a certain area, they require less fertilizer and pesticides. Need some ideas? Try the following sure-fire bee-attractors:

**Butterfly milkweed**— *Asclepias tuberosa*. Clusters of bright orange flowers in mid-summer. 1’ h, 1’ w. Perennial.

**Plains coreopsis**— *Coreopsis tinctoria*. Daisy-like flowers with yellow petals around dark red centers in summer. 2’ h, 1’ w. Re-seeding annual.

**Rocky Mountain bee plant**— *Cleome serrulata*. Pink to lavender spidery flowers in mid-summer. 2’ h, 2’ w. Re-seeding annual.

**Purple prairie clover**— *Dalea purpurea*. Tiny, bright purple flowers on dense, cone-like heads in mid-summer. 1’ h, 1’ w. Perennial.

**Purple coneflower**— *Echinacea angustifolia*. Pink to lavender petals around an orange-brown cone in early summer. 1’ h, 1’ w. Perennial.

**Sunflower**— *Helianthus annuus*. Golden petals around a brown-purple disk in late summer. 10’ h, 3’ w. Annual.

**Beebalm**— *Monarda fistulosa*. Fragrant, spidery, lavender flowers in late summer. 2’ h, 2’ w. Perennial.

**Beardtongue**— *Penstemon grandiflorus*. Lavender, snapdragon-like flowers in late spring. 2’ h, 1’ w. Perennial.

**Black-eyed susan**— *Rudbeckia hirta*. Yellow petals around a chocolate center in summer. 2’ h, 1’ w. Short-lived, re-seeding perennial.

**Goldenrod**— *Solidago sp*. Bright yellow plumes in late summer. 2’ h, 2’ w. Perennial.

As bees busily buzz around these plants, keep in mind that almost every species is gentle and will not sting. Their main goal in life is to collect nectar and pollen for them and their young—with by-products for people to enjoy!
It's a Kid's Yard
Christina Hoyt, Nebraska Statewide Arboretum

It used to be that kids were told “Go outside and don’t come home till sunset”. With that nearby creeks, fields, forests, parks or gardens were transformed into very special and wondrous places where a child’s imagination was acted out.

However, with television, computers, video games, organized activities and continuous fears of “stranger danger”, kids find themselves spending most of their time indoors. Recent studies have linked an increase in childhood obesity, ADD symptoms and childhood depression to this phenomenon and shown that time in nature can actually relieve some of these symptoms. One step of re-connecting kids with nature is creating and preserving meaningful nature experiences for them close to home.

Our yards have become increasingly manicured and with tidy lawns, carefully pruned shrubs and limbed up trees all designed for the adult aesthetic. By looking through a child’s eye, and make a few inviting changes, yards that were once “off limits” can become an inviting place for children to explore nature-- and it doesn’t have to be difficult. Instead of buying that box-store swing set a child quickly outgrows use these guidelines to create a more lasting play environment:

Let go of a perfectly tidy landscape, especially a highly manicured lawn and the chemicals it takes to make it look that way.

1. Plant a diversity of shrubs, perennials and trees that will encourage wildlife including pollinators such as birds and insects.
2. Stay away from poisonous plants with young children such as yew and monkshood.
3. Allow “rough-edges” that are not manicured. Areas planted as a mini-prairie, wildflowers or un-mowed areas of lawn work well.
4. Give children spots of their own to dig, plant, build and play.
5. Instead of pre-built play houses or swing sets, give children materials to build their own. For young children create the structure’s outline and let them create their own walls out of blankets or sticks; let older children build the whole thing. Forts needn’t be in trees to still be magical places for kids.
6. Learn to garden together. Gardening can teach skills such as patience and stewardship and build self-esteem. A garden doesn’t need to be big to be effective. If your neighbor has children, perhaps share a plot of ground together to also encourage team work and sharing.
7. Most kids can identify exotic plants such as a Giant Sequoia or palm tree, but not the plants found in their own state such as little bluestem or oak trees. Use native plants wherever possible. These plants make better habitat for wildlife and require little maintenance.
8. Add loose parts. These include sticks, branches, seeds, rocks and other objects that are movable and can be used in imaginative play.
9. Use sensory plants. Children love plants that have interesting scents, textures, colors and smells.
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Planting for Hummingbirds
Karma Larsen, Nebraska Statewide Arboretum

There’s nothing common about a hummingbird. In size they are the smallest bird, smallest egg, smallest nest; their colors include metallic greens, blues and reds; they have the highest metabolism of any animal, with a heartbeat of well over 600 beats per minute; and they are the only group of birds that can deliberately fly backwards.

Their diet consists of flower nectar, sap from trees, spiders and insects, usually captured in or near flowers. It’s been estimated that not one square meter, or 40” plot of land, goes unvisited by them in any given year. Still, they may go unnoticed until hummingbird feeders are placed to draw them more readily into focus.

Nebraska is on the migration route for four hummingbirds but only the ruby-throated hummingbird has ever been spotted in Lincoln’s Pioneers Park Nature Center, and then only on its fall migration that occurs from early August into late October.

If you’ve never had the privilege of watching hummingbirds closely or regularly, it is well worth the time and effort to entice them into your garden. You can provide supplemental nourishment with a sugar-water mixture in a hummingbird feeder (4 parts water to 1 part sugar, boiled to remain fresh longer, NOT dyed red and changed frequently during hot weather) but the following plants will attract them into your yard and encourage them to stay longer.

As a rule, native plants contain far more nectar than cultivated hybrids. Some spring-blooming plants for their early migration in late April to mid-May include: azalea, bottlebrush buckeye, columbine, coral bells, coralberry, crabapple, currant, flowering quince, hawthorn, honeysuckle, penstemon, tuliptree and weigela.

For the fall migration that begins in early August and can run almost until frost, there are lots of options. Some of their favorites are: agastache, butterfly bush, daylily, four o’clocks, gayfeather, hibiscus, hollyhock, honeysuckle, hosta, lamb’s ears, milkweed, monarda, penstemon, phlox and salvia.

Note: With the addition of a few hummingbird feeders and lots of flowering plants, we went from seeing one hummingbird a year to seeing them several times a day for several months during their fall migration. And though they are regulars now, “common” they are not!
Decorate for Christmas Naturally
Bob Henrickson, Nebraska Statewide Arboretum

Whether you're creating eye-popping mantle displays, gorgeous wreaths or topiary trees, natural crafts make holiday decorating more fun. A holiday glow begins from the time you start planning your designs and gathering materials.

Make this holiday season special by creating your own natural craft ornaments for your Christmas tree, and family members of all ages can get involved. Your tree will be unique because of the materials you work with and the personal touches you add. You may even decide to grow certain plants next year specifically for crafting tree ornaments. If you want nature inside for the holidays, it's best to begin collecting early. For the best decorations, keep your eyes open year-round for items from wooded areas, meadows or right in your own yard and garden. A large Christmas tree seems to devour small ornaments, so this is a perfect way to use up old or faded natural materials that still have some structure. You can spray paint them silver or gold to give them a warm holiday glow. Here are some fun and unique ways to bring the outdoors inside for the holidays.

Pinecones are about the easiest to collect, especially in late fall. All you need to do is fasten a small hook or paper clip into the back of the cone, tie a small bow onto the hook and hang on the tree. You can also create shimmery pinecones by spray painting them silver or gold, or adding glitter or fake snow. Cluster different cones together for variety, along with fresh evergreen branches.

Seedpods can create some beautiful decorations, and there's no limit to where you can find these. Seedpods of black-eyed susan, wild beebalm, Chinese lantern, prairie bushclover, Siberian iris, Penstemon, poppies, love-in-the-mist and milkweed are just a few examples.

Acorns: Gather different sizes and cluster them together, hold with glue (you may want to spray them with a gloss sealant), add your bow and hang. Or consider stringing them along with black walnuts or other nuts you've collected. Different varieties of nuts in the shell can be grouped and glued together.
and hung with a bow, or spray painted gold to add some sparkle.

Use **dried flowers** to create small bouquets or little nose gays. Create small bundles of dried materials, secure with floral tape or tie with raffia. Use silver king Artemisia, white statice, sweet annie, feathery dried grasses or goldenrod as backing or filler material. Dried rose buds, strawflowers, gomphrena and others can be included for a splash of color. Or glue dried flowers on small styrofoam balls to create colorful ornaments.

**Osage orange or hedge apples**, gathered in the fall, can be transformed into ornaments with their decorative seed patterns. Cut the large fruit into ½” thick slices, allow to dry in the oven and spray paint both sides gold. After they dry, simply insert ornament hangers and hang on the tree. Whole osage oranges, tucked into a wire egg basket, add an old-fashioned feel to the home.

**Holly, bayberry, coralberry or rose hips** are always a nice addition, especially if there are a lot of red berries on your sprig. A bow on the stem can be used as your hanger.

**Dried fruit** is a real attraction on the tree, like homemade stained glass windows. Use slices of orange, apple, pear, lemon and grapefruit. Slice your fruit 1/8” thick, dip in a solution of one part lemon concentrate and one part water, making sure the fruit is well-covered. Line several cookie sheets with brown paper bags and heat at 175 degrees for two hours, then turn fruit over and leave in oven another 1½ hours.

**Pomanders** are wonderfully fragrant, natural room fresheners. Oranges, kumquats, limes and lemons covered with clove studs and rolled in cinnamon and orris root or left in a bowl overflowing with spices, including bay leaves and lavender, is a definite attention getter.

In the autumn, it’s not hard to find little **strawberry ears of corn** that can be hung in clusters on the tree with a cup hook in the back and a bow to brighten them up. You can spray paint dried okra seedpods and small gourds to complete the harvest scene.

If you have access to **bark from a white birch tree**, lay the bark flat on a table, use a cookie cutter and trace the shape, cut out and put a small hole in the ornament, tie a bow and hang on tree. The salmon-colored bark of river birch can also be peeled off and glued onto the sides of a tiny birdhouse made of cardboard.

Why not gather several empty **bird nests** and rest them on branches to finish the natural look? You may even want to add small eggs to the nest, dyed to highlight the color theme of your tree.

There are many natural beauties out there for your natural Christmas tree; and there won’t be another Christmas tree like it in the whole world!
Fall Color in Shrubs
Bob Henrickson, Nebraska Statewide Arboretum

Most folks think of trees when they dream of fall color, but there are many shrubs that can put on a fantastic fall show here in Nebraska. Fall is also a great time to plant shrubs, so if you’re replacing plants in your landscape or adding new ones, look for varieties with great color this time of year. Garden centers and nurseries usually have a good selection and it’s the perfect opportunity to see a plant’s fall color before you purchase it.

I love the way shrubs take on a whole new look as they transition from green to various hues of red, orange, yellow and purple; and often this occurs just as clusters of fall fruit are ripening also. In Nebraska, where leaves can progress from green to brown almost overnight due to fast-moving cold fronts, many shrubs known for fall color elsewhere are unreliable here, but there are still lots of options. Some of these shrubs may not be readily available but they’re worth seeking out. Many of them can grow into very large shrubs—even small trees—so provide plenty of space for them to grow into their natural shape without being pruned into meatballs!

*Amelanchier*, Serviceberry, provides some of the best, most reliable fall color for this region. One of the best is Shadblow serviceberry, *Amelanchier canadensis*, with pumpkin or red-orange color. Serviceberries typically grow in the shadow of taller trees and can be planted with other shade-loving plants to make an outstanding fall show. My favorite companion plants include the butter yellow of eastern redbud and vernal witchhazel, or the brilliant red of burning bush.

*Aronia melanocarpa*, Black Chokeberry, is a very reliable landscape plant in Nebraska. They can grow to 6’ high with clusters of small white flowers in early spring, followed by juicy blue-black fruit for wildlife.
and lustrous dark green leaves. Chokeberries are tough shrubs, forming dense thickets for wildlife cover, and growing in full sun or part shade. ‘Viking’ was selected for its large clusters of fruit and striking red fall color. I like ‘Autumn Magic’ for its red-purple mix of colorful leaves and ‘Iroquois Beauty’ for its compact 2-3’ size.

Aronia arbutifolia, Red Chokeberry, is more of an upright shrub. It’s somewhat open and tends to become leggy with age so it’s best to plant 3’ high selections like ‘Brilliantissima’ in a group or mass to create a sea of red fruit and foliage. I’ve seen this plant struggle in hot, dry sites and in compacted construction soils with high pH. It prefers well-drained, compost-enriched soils and afternoon shade.

Corylus americana, American hazelnut, is a large, multi-stemmed, native shrub with handsome dark green leaves that I have seen change into a blend of yellow, orange and red in fall. It produces great-tasting, high calorie nuts. Most hybrid hazelnuts were selected for nut production rather than fall color and tend to have a dirty yellow fall color, so if you want fall color you may want to avoid the newer hybrids. It can be planted in full sun to light shade.

Euonymus alatus, Burning bush. No discussion of shrubs with fall color is complete without mentioning the brilliant red of burning bush. ‘Compactus’ grows to about 6’ tall and the cultivar ‘Rudy Haag’ is a 4’ slow-growing variety with unique, pinkish-rose fall color. Burning bush is a tough plant that can handle a range of growing conditions, including poor soil and mild drought. An even hardier, and very similar, Nebraska native is eastern wahoo, Euonymus atropurpurea. I like it for its lime-colored twigs, fall display of pink to scarlet leaves and pink, popcorn-like fruit that dangles like ornaments after the leaves have fallen. Witchhazel is a great companion plant for either of these.

Sumacs are unrivaled for their gold, red and maroon fall colors. They tend to spread and sucker, so they are best planted in a confined space where they can form thickets. The cutleaf selection ‘Laciniata’ tends to be even more spreading and suckering than other sumacs. Sumac stems can be trained to form rustic small trees. For fall color, ‘Prairie Flame’ sumac is a compact selection with rich maroon fall color; ‘Tiger Eye’ has golden-yellow leaves that turn red and orange in fall; and ‘Gro-low’ sumac is a popular groundcover selection growing up to 5’ high with deep green leaves that turn orange-red in fall.

Viburnums. As my favorite species of shrub, I cannot list just one viburnum for fall color. Blackhaw viburnum has red to purple fall color and bluish-black fruit. American Cranberrybush viburnum, including ‘Wentworth’ and ‘Spring Red,’ has red fall color and bright red fruit. The arrowwood viburnum selections ‘Autumn Jazz’ and ‘Red Feather’ are outstanding, with a kaleidoscope blend of yellow, orange and red. Other notables include Koreanspice viburnum with wine red fall color and Burkwood with brilliant orange-red. Most viburnums are large shrubs but a number of smaller cultivars are available also.
Proper planting is critical to the establishment of healthy, thriving trees. The following planting guidelines have been developed to help new trees get off to a successful start. The recommendations are based on nationally recognized standards as well as experience compiled by the Nebraska Statewide Arboretum and the Nebraska Forest Service. The recommendations assume that an appropriate tree has been selected for the planting site and that the site is suitable for planting.

**DIGGING.** Dig a saucer-shaped hole wider than the root system but no deeper than the root mass. Most holes do not need to be deeper than about one shovel’s depth (10-14 inches). The bottom of the hole should be firm enough to prevent the tree from settling deeper after planting. Using an auger is not recommended since trees often settle too deep and the sides of the holes become glazed. If using an auger, don’t drill deeper than needed and loosen the sides of the hole.

**PLANTING.** Plant so that the base of the trunk is at original ground level or slightly higher. The first lateral roots should end up just under the soil surface (1-2 inches deep) and the trunk should flare visibly at ground level.

  -- Always locate the first main lateral roots and remove any excess soil above them before setting the plant in the hole. The first main roots are often several inches below the top of the container or root ball.
  -- All graft unions should be visible above the soil line.
  -- Remove all pots and containers before planting.
-- For balled and burlap (B&B) stock, try to remove the wire basket and burlap before placing the tree in the hole. If maintaining the integrity of the soil ball is important, then remove the bottom part of the burlap and wire basket before setting the plant in the hole and then remove the remaining burlap and wire basket after stabilizing the tree in the hole. Remember to check for and remove any excess soil at the top of the rootball before planting.
-- Loosen and spread circling roots before backfilling (especially important for potted trees). It may be necessary to cut larger roots that cannot be straightened to prevent girdling, but this should be done with caution. Reject plants with severely circled or girdled root systems.
-- For potted trees, try to remove as much of the original growing medium as possible before planting to help achieve good soil-root contact. Dunking in water or spraying with a hose will help in this effort.

**BACKFILLING.** Backfill with the original soil dug from the hole. Large clods and soil chunks should be broken up as much as possible. Adding water during backfilling can help remove air pockets and better moisten the roots.

**MULCHING.** Mulch individual trees with a 2-4 inch layer of wood mulch extending from the trunk to at least the drip line of the tree. Where possible, mulch trees and other plantings together en masse to help separate from surrounding turf. Don’t pile the mulch deeply over roots or against the base of the trunk and don’t mulch with rock or use plastic weed barriers under the mulch.

**STAKING AND BRACING.** Brace the tree if it might dislodge or blow over in the wind (most trees typically benefit from staking). Some sway should be allowed in the tree after staking. Use only broad, belt-like materials to attach the bracing to the trunk to help prevent rubbing injuries. Do not brace with wire, rope or wire through hose. Remove staking within one year.

Once the tree is planted, there's still work to do. Here are some tips on post-planting care:

**WATERING.** After planting, keep the rootzone moist but not waterlogged. In general, a newly planted tree should receive about 1 inch of moisture per week, including rainwater, during the first growing season. Check the rootzone frequently for moistness -- don’t just guess. Many trees are lost to either under- or over-watering. Containerized trees often need more watering than bare-root or B&B stock, because the porous growing medium they are potted in dries out faster.

**FERTILIZING.** If the right tree was selected for the planting site, fertilizer is generally not needed. If fertilizer is desired, use only a slow-release, low-nitrogen fertilizer applied to the soil surface after planting.
-- Never add fertilizer to the planting hole since it can damage newly transplanted roots. In addition, excess nitrogen in the soil can cause newly planted trees to add top growth at the expense of proper root development.
-- Address major soil problems before planting. Adding organic matter to the planting site before planting can be very beneficial for poor, inorganic and/or compacted soils.

**PRUNING.** At planting time, prune only to remove dead or damaged branches and to correct structural defects. Never cut back healthy branches or trim the tree to try to "balance" the top with the roots. The tree will benefit from having as many food-producing leaves left on as possible. Also, try to leave lower branches on a tree for as long as possible after planting. Lower branches help protect the trunk from cracking, sunscald and animal damage and they aid in developing good trunk taper. If needed, limb the tree up gradually over a matter of several years after planting. Monitor the tree when young and prune, sparingly but properly, to prevent structural defects.
Asters Bloom in the Fall—Thank Goodness
Bob Henrickson, Nebraska Statewide Arboretum

For many weather-weary gardens here in the Great Plains the summer can’t end soon enough. The relentless heat and humidity of July and August has taken its toll on many flowering perennials. As the summer season grows old, flower colors begin to fade and the result often is a garden full of green. If you’re not ready for plain ol’ green then plant some colorful asters to usher in the fall. Asters bloom late into the year—usually in September and October—with masses of daisy-like flowers in shades of pink, red, white, blue, magenta and purple.

The name aster comes from the Greek word astron, meaning “star,” referring to the shape of the flower head. The flowers not only enhance the fall garden, they produce nectar for migrating butterflies and other beneficial insects. Some asters thrive in poor dry soil and others like their feet wet. There is an aster for almost any spot in the garden, from full sun to shade.

Most asters form broad bushy clumps, so plant them at least 18” apart. Mature clumps might need to be divided every 3-4 years in the early spring, or late fall after the flowering has finished. Cut back the tops of taller selections by at least a third late spring to early summer to create a bushier plant, prolong fall bloom and keep leggy plants from flopping. This pinching should be done prior to mid-July, or it will have an opposite effect and blooming will be reduced.

The following native asters are hardy, sun-loving plants and represent some of the best for the garden. Let’s begin with one of the most popular species, the moisture-loving New England Aster, Aster novae-angliae, which has furnished us with a wide variety of cultivars. 'Alma Potschke' grows...
3-4’ tall, with bright rosy red flowers. 'Purple Dome' grows up to 2’ and, come early fall, is covered in bright purple flowers. Many asters are prone to mildew and leaf diseases and can wind up with bare legs at the base of plants. I combine my asters with ornamental grasses to help hide the legs of tall asters. The main destructive insect pest in our area seems to be the lacebug, a small grayish insect that appears in midsummer and sucks the plant juices from the undersides of leaves, primarily of the New England Aster. Leaves turn yellowish and eventually brown and fall off. Organic or synthetic insect sprays can be used for control, or try planting them in a sunny, airy open position and avoid planting them in dry, stressful areas like parking islands. Like all plants, if they are kept healthy they tend to resist attack from insects.

There are also a number of asters native to the dry prairies and rocky bluffs of the Great Plains. These drought-busters are carefree plants, growing well in hot conditions. **Fragrant aster,** *A. oblongifolius,* includes the selections 'October Skies', 'Raydon's Favorite' and 'Dream of Beauty,' all highly rated and easy to grow in sunny, well-drained conditions. **Fendler's aster,** *A. fendleri,* includes the white-flowering GreatPlants® selection 'My Antonia', one of the best for rock gardens as it prefers lean, sandy soils. **Upland aster,** *A. ptarmicoides,* forms bushy plants with narrow, dark green foliage topped with creamy white flowers. **Smooth aster,** *A. laevis,* has sky blue flowers on 4’ plants and the selection 'Bluebird' has perfectly clean blue-green foliage that resists lacebug attacks.

The **Woods aster** series, *Aster x dumosus,* offers 8” dwarf asters in pink, purple and blue that are excellent for the front of the fall border. These compact selections all have clean, mildew- and rust-resistant foliage that remains attractive all season. Another tiny aster worth growing is the European native, **Rhone aster,** *Aster sedifolius* ‘Nanus’, a 12” ball of tiny sky-blue flowers.

To take full advantage of the diversity of asters—short, medium and tall, choose a worthwhile companion plant. Some of the best partners for tall asters are the late grasses like switchgrass, big bluestem and Indiangrass. I like combining the low “drought-buster” asters with shorter prairie grasses like little bluestem and blue grama.

There are many more dependable aster selections that are worth mentioning. With such a great variety to choose from, there should be at least one aster in every garden.
Some plants should be in every garden. Others should be kept out at all costs. The milkweeds qualify on both counts.

The milkweeds (genus *Asclepias*) are a large group of plants, with some 120 species in the Americas and Africa. We have 17 species here in Nebraska, occurring in a wide variety of natural plant communities, including tallgrass prairie, sandhills prairie and wetlands.

Two of our native species in particular have proven their merit as garden plants, being both beautiful and well-behaved.

Butterfly milkweed (*A. tuberosa*) is the best-known and most widely-grown. A showy wildflower in its native prairie habitat, butterfly milkweed also makes an outstanding garden perennial. Its popularity is due to its prolific clusters of bright red-orange flowers which smother the rounded, 1-2’ tall plants. Not only are its orange tones (sometimes ranging to yellow) uncommon among garden perennials, the flowering season of butterfly milkweed comes toward the end of the early summer rush, when many gardens are entering the doldrums. On top of all this, butterfly milkweed is a butterfly magnet, bringing even more color and animation to the garden.

Swamp milkweed (*A. incarnata*) is less commonly cultivated, but more gardeners are discovering its attributes. It has a different growth form than butterfly milkweed, with slender, willowy stems that can reach 5’ in height, topped with clusters of fragrant, purplish-red flowers. As the name implies, the native habitat of swamp milkweed is wet, marshy sites, but it adapts very well to typical gardens and residential landscapes. It also is highly attractive to butterflies.

Excepting these two, the majority of our milkweeds are not recommended as garden plants, unless milkweeds are the only thing you want in your garden. Some are especially adept at taking advantage of disturbed habitat like roadsides and agricultural land, and would swamp a flower bed like Husker fans on O Street.

While most should be kept at arm’s length from the garden, all of our milkweeds are worth getting to know up close in the wild. Milkweed flowers are among the wonders of the natural world, rivaled in complexity only by the orchids. As with the orchids, the pollination biology of milkweeds is fascinating, with milkweed flowers designed to snag the foot of a visiting butterfly, wasp or other insect so that it picks up a “sack” of pollen to carry to another flower.

Whether you bring them into your garden, or enjoy them in the wild, milkweeds are a beautiful and fascinating part of the rich flora of Nebraska.
Poppy mallows for the Home Garden
Bob Henrickson, Nebraska Statewide Arboretum

The poppy mallow (Callirhoe) is a genus of nine species in the mallow family, native to the prairies and grasslands of North America, that includes some familiar plants like hibiscus, hollyhock, cotton and okra. They’re beautiful plants, offering a profusion of brightly colored flowers set among deeply cut foliage. They generally start flowering in late May through June, and often continue until frost if cut back. Poppy mallows prefer a hot, sunny, dry situation with well-drained soils. They have no serious insect or disease problems but crown rot may occur in poorly drained soils. Its root is a long-lived corm that can get as big as a turnip! They can be grown in bare areas as a ground cover or planted among prairie grasses where stems get squeezed down or weave in among other plants. They can be used in border fronts, rock gardens, wild gardens, naturalized areas or meadows. Because of their lanky nature, they are especially useful on slopes or sprawling over stone walls. Generally poppy mallows will spread in the garden, but will not root at stem nodes. Plants may self-seed in the garden in open ground or under optimum growing conditions. Long tap root gives this plant good drought-tolerance but makes transplanting of established plants difficult.

The prairie winecups or purple poppy mallow, Callirhoe involucrata, is the main species seen in gardens, but there are a fair number of other species that deserve to be planted more. I’ve grown all of following species over the years and they all have been very dependable with bright, cheerful flowers and deep green foliage that remains attractive well into the season.

Purple Poppy Mallow, Prairie
Winecups, *Callirhoe involucrata*. A sprawling, ground-hugging plant that can cover an area up to 4’ or be planted among prairie grasses or other vertical perennials. Vibrant magenta flowers have a contrasting white eye and are particularly attractive among silver-leaved prairie plants like leadplant, *Artemisia frigida* or rattlesnake master. Cutting back the long stems mid-summer tidies up the plant and encourages new flowers.

**Mexican Wine Cups**, *Callirhoe involucrata* var. *tenuissima*, has proven to be a showy, cold-hardy plant here in the Great Plains. It blooms profusely in June with clear pink, white-eyed flowers set among very finely cut foliage. It forms a foliage mat quickly in spring, growing from a carrot-like taproot to 15” high and up to 3’ wide if given room. It demands lean, well-drained soil and is ideal for hot, sunny rock gardens, spilling over retaining walls. I like it combined with short prairie grasses like blue grama, little bluestem or prairie dropseed.

**Pale Poppy Mallow**, *Callirhoe alcaeoides*. This prairie native has more deeply cut, triangular leaves forming a fresh rosette of lacy leaves, more upright than the winecups. The selection ‘Logan Calhoun’ has showy open-faced 2” white flowers usually blooming several weeks before winecups. Growing to 18” high, it is very drought-tolerant and can take the heat. I like it combined with *Echinacea pallida*, ‘Prairie Smoke’ skullcap or *Penstemon strictus* and Missouri primrose. This prairie gem needs to be planted in full sun and well-drained soils or raised beds or it can get weak and rangy.

**Fringed Poppy Mallow or Standing Winecups**, *Callirhoe digitata*. This southern Great Plains native has finely cut, finger-like foliage and slender blue-green stems. It grows from 2-4’ high, topped with rose-red, fringed flowers in June. It prefers growing in full sun, dry conditions and lean soils. Its naked stems and bright flowers look particularly attractive combined with *Calylophus serrulatus* ‘Prairie Lode’, prairie larkspur or in among little bluestem and prairie dropseed.

**Bush’s Poppy Mallow**, *Callirhoe bushii*. This species is rarely seen and is native only to portions of the Great Plains. The deep green leaves are divided into finger-like lobes, forming a bushy plant to 2’ high from a thick rootstock. The upward facing, cup-shaped bright magenta flowers bloom in midsummer, later than most poppy mallows. This plant is easily grown in somewhat dry, well-drained soils in full sun or light shade. Like all *Callirhoe*, good drainage is essential so avoid highly organic, moisture-retentive soils.
Return of the Elm

Justin Evertson, Nebraska Statewide Arboretum

Until the 1970s, elm trees were perhaps the most common trees planted in communities across Nebraska. American elm (*Ulmus americana*) was especially popular as its tall, arching habit made it an ideal shade tree for planting along streets, in parks and in back yards. In many communities the American elm comprised more than half the total species planted in public spaces. Unfortunately, Dutch elm disease spread rapidly across the state in the 1960s and 70s killing most American elms along the way and laying bare (almost overnight) the leafy canopies that once graced so many of our streets. As a result, elms fell out of favor and are rarely planted in communities today. Fortunately, new disease-resistant varieties have been developed that can tolerate the poor soils and extreme climate of the Great Plains.

Some of the most promising elms worth trying in Nebraska include: 'Valley Forge' American Elm (*Ulmus americana* 'Valley Forge'): One of the most disease-resistant elms, it also tolerates deicing salts, air pollution, drought, and a range of soil pH. Upright, arching habit making it an ideal street tree. 50’-70’ height and spread

Japanese Elm (*Ulmus davidiana* var. *japonica*): Glossy green leaves, relatively tight-branching and a rounded habit. 40-50’ tall by 30-40’ wide

'Accolade' Elm (*Ulmus japonica* × *U. wilsoniana*): One of the most promising and popular elm cultivars. 50-70’ tall and 40-60’ wide
‘Cathedral’ Elm (*Ulmus davidiana* var. *japonica × U. pumila*): A fast grower that is tolerant of clay soils, and has yellow to orange fall color. 40-50’ tall by 40-50’ wide.

Lacebark Elm (*Ulmus parvifolia*): Attractive mottled, lacy bark develops on older stems. Leaves are smaller than most elms and deep green and very glossy. Flowering occurs in late summer with seed development in early fall. The yellowish seeds are quite attractive against the shiny green leaves. Many trees also develop a nice reddish fall color. Best adapted to the southern half of Nebraska. ‘Emerald Prairie’ is an exciting new cultivar developed in Kansas that may have better cold hardiness. 25-40’ tall by 20-35’ wide.

‘Frontier’ Elm (*Ulmus parvifolia × U. carpinifolia*): Similar to lacebark elm, with small, glossy leaves that turn a dusty purple in the fall, and mottled bark on maturing trunks. Although some reports indicate winter dieback in the Great Plains, it has performed well in southeast Nebraska for several years. 30-40’ tall by 25-30’ wide.

‘Pioneer’ Elm (*Ulmus glabra × U. carpinifolia*): Pioneer elm has been planted in several locations in Nebraska and has performed well in Creighton, Pierce, Waverly and Alliance, among other communities. A fast grower with dark green leaves and an upright, pyramidal habit when young. 40-50’ tall by 40-50’ wide.

‘Triumph’ Elm (*Ulmus ‘Morton Glossy’*): Vigorous upright habit with strong branches bearing glossy, deep-green foliage. The tree appears to be very adaptable to a wide range of growing conditions. 50-60’ tall by 30-40’ wide.


Rock Elm (*Ulmus thomasii*): Native to eastern Nebraska. Its relatively narrow and upright habit is reminiscent of pin oak. A distinctive feature of this tree is the cory bark ridges found on stems and young branches that eventually develop into a deeply fissured bark. 50-60’ high by 30-40’ wide.
Persimmons
Kristina Jensen, Nebraska Statewide Arboretum

There is a rare and fascinating tree whose native range is just outside of Nebraska. Persimmon, *Diospyros virginiana*, is a deciduous tree that can be found growing in dry woodlands, limestone glades, prairies, thickets, abandoned fields and along roadsides.

In spring, tiny yellow bell-shaped flowers adorn newly leafed-out branches. The foliage is dark green and glossy above, paler below. It turns buttery-yellow in autumn, infrequently reddish-purple. One to two-inch berries change from green to yellow to dark orange in color before maturing in late fall. The fruit is edible and can be rather astringent before a flavor-taming frost. Dark, alligator back-like bark maintains interest through the winter.

The persimmon has a variety of uses outside of the ornamental landscape. Its suckering growth habit can be utilized for naturalized areas and erosion control. Its fruit makes it a perfect choice for wildlife plantings and for human consumption. The pulp can be used in a variety of baked goods, syrups, jellies and ice cream. The seeds have been used as a coffee substitute; the leaves can be brewed for a tea; the flowers are useful in honey-making. A relative of ebony, persimmon wood has also been valued in the production of textile shuttles, golf club heads and parquet flooring.

Later this month, third graders in the Lower Platte South Natural Resources District will become acquainted with persimmons. As a part of Arbor Day festivities, the District will be distributing plants grown from a hardy seed source by the Nebraska Statewide Arboretum. The students will learn about persimmons in the classroom and then have the opportunity to watch them grow in their own yards.
Forcing Flowering Branches Great Way to 'Force' Spring

Bob Henrickson, Nebraska Statewide Arboretum

After another long, cold winter, it’s time for some reminders that spring is just around the corner. The winter landscape can be beautiful, but it can also drag on for what seems like an eternity. The perfect remedy to chase away the dreary winter blues and bring some spring color into your home is to force some branches from your favorite spring-blooming shrubs.

Almost any shrub that blooms in early spring can be forced into bloom inside. Many ornamental trees and shrubs set their flower buds during the summer for bloom the following spring, go dormant in winter and come out to bloom when exposed to warm temperatures and moisture. Late winter, the best time to prune deciduous trees and shrubs, is also the best time to cut branches for forcing. The flower buds are generally fatter and more rounded than leaf buds.

The farther into spring you collect branches, the earlier they will open. Some woody branches will take up to three weeks to bloom, while others will flower in a week or less. No matter how long it takes, this is a great way to have a few blooms indoors while you wait for the arrival of spring.

It’s best to cut branches for forcing when the outside temperature is above freezing – they will be more pliable and make a better transition from cold outdoor temperatures to warmer indoor
temperatures. When you get inside, recut the
stems by a few inches under running water to
prevent air from being sucked into the
vessels. Make sure you cut the stem at an
angle to give the branch a larger surface to
drink in the water.

After the branches are cut, hammer or
split the cut ends, then submerge the
branches in very warm water in the bathtub
for about four hours to allow the buds to
absorb water directly. If you want, you can
stand the cuttings in a deep bucket of warm
water with a plastic bag over the tops to
increase the humidity overnight. The next
day, you can stand the branches in fresh
warm water with a floral preservative
dissolved in it and put the container in a
bright location. You should start forcing at 50
degrees Fahrenheit; higher temperatures at
the start will blast the buds. After a couple of
weeks, you can speed up flowering by moving
the buds to a warm room. Check the branches
frequently; they will need regular misting to
prevent buds from drying out. You should
also change the water every three days.

Select branches that are least 1 foot
long with many enlarged buds and prune
branches from all sides of the shrub to
maintain symmetry. Whichever shrub you
choose, make sure you cut each branch all the
way to the main stem. You can always shorten
the branches later if they are too long for the
vase.

Pussy willow, flowering quince, and
forsythia are among the most common and
easiest woody plants cut for forcing. Nanking
cherry, cornelian cherry dogwood, vernal
witchhazel and clove currant are not as
common but are very easy to force and they
make excellent landscape plants as well. The
spicy clove scent and rich yellow color of the
clove currant will brighten any day.

Suitable branches can also be cut from
other willows, wild plum, serviceberry,
cherries, lilacs, flowering quinces and red
maple. It’s best to wait until March or perhaps
April to take cuttings from harder-to-force
ornamentals such as crabapple, magnolia and
redbud. Late winter is also a great time to
collect the bare branches of hazelnuts, alders,
birches and hornbeams to force and elongate
their slim, pendulous catkin flowers.

If you haven’t forced spring
blossoming shrubs before, make this the year
and you’ll be rewarded with colorful, fragrant
flowers in your home.
Immediate Care for Storm-damaged Trees
Community Forestry Program, Nebraska Forest Service

Trees damaged by storms generally require some degree of immediate attention (removal of low hanging branches, clearance from utility lines, etc). Homeowners working on their trees need to be careful to watch out for safety concerns and to consider the best approach for dealing with the tree they are trying to save. Chain saw work off the ground and other heavy work (essentially all work on large trees) should be done only by professional arborists.

**Hazardous Trees.** Loose or loosely attached branches and split trunks are obvious safety concerns that should be taken care of as soon as possible to avoid the possibility of injuring someone or damaging property later when the branch or that part of the tree falls. Broken but firmly attached branches that pose no immediate danger of falling can be pruned whenever convenient after the more hazardous loose branches have been removed. Trunks split down the middle are very difficult to brace adequately, and trees with split trunks should be removed or taken care of by a professional arborist.

**Power Lines.** Branches hanging over, or near, power lines are a major safety hazard from any standpoint. Special training is required to prune branches near power lines safely. Homeowners should never attempt to prune these branches themselves. Contact your local power company or an arborist trained in electrical line clearance to have these branches removed.

**Leaning Trees.** The heavy weight of snow or ice may tip a tree over by breaking some of the roots. Trees leaning from root breakage usually do not survive well. If a tree tips or develops a permanent lean in a storm,
it often means the tree had damaged or poorly developed roots before the storm pushed it over. If a leaning tree does survive, it often becomes a hazard from the damage it could cause if it were to fall. Mature trees rarely survive attempts to pull them back into place after being tipped over by a storm. These generally should be removed and replaced with new trees. Very young trees (typically less than 10 years in the ground) may survive if the trees are gently pulled back to their vertical positions. If this is done, avoid additional damage to the remaining roots if possible, press out any air spaces that may have formed in the loosened soil, water the area of the root system twice each week in the absence of rain during the fall, spring, and summer, cover the root area with two to four inches of wood chip mulch, and stake the tree for the first year to prevent the tree from falling again. Do not use rope, wire, wire in garden hose, or any narrow band of material to tie around the tree during the growing season. These will injure the trunk and could kill the tree as it tries to grow. Use a broad strap or other fabric at least one inch wide and inspect and adjust the location of the strap once each week during the growing season to minimize any injury the strap might cause to the bark.

Pruning. The only pruning that should be done at this time is the removal of broken branches. Leave the fine pruning and finishing cuts until later. All pruning cuts will dry out to some degree during the winter. Take care not to leave any stubs from your pruning cuts as these will not allow the tree to heal properly. Have a trained arborist make the final pruning cuts, especially on larger mature trees. Branches that have pulled away from the trunk should be removed at the bottom of the split. Avoid causing any additional damage to the trunk. Remove any loose bark or wood fibers, but do not cut into bark that is living and still attached. Never top trees, topping creates serious hazards and dramatically shortens the life of a tree. And never use paint or wound dressing to cover wounds. These materials do no good for the tree and actually interfere with the tree’s wound sealing process.

Be Conservative. Do not prune or remove more than you have to at this time. Remove hazards, but save other decisions on pruning and removals for later. While the damage may look severe at this time, concentrate more on how to can save trees rather than making quick decisions on cutting them down. Keep in mind why you wanted your trees. The trees may still be able to serve that function. Don’t be too hasty to make a decision to remove a tree if you can delay that decision to the spring or even a year from now. You may decide later the tree was not damaged as badly as you thought.

For more information, go to: http://www.nfs.unl.edu/ or http://arboretum.unl.edu/.
Shrubs Help Brighten Winter Landscape
Christina Hoyt, Nebraska Statewide Arboretum

How can we brighten up the winter landscape? One way is by incorporating evergreen and semi-evergreen shrubs into plantings. Evergreen shrubs are not restricted to yew, boxwood, arborvitae and juniper but extend to include cotoneaster, viburnum, rhododendron, bayberry and many of the dwarf pines and spruces.

This time of year, many winter arrangements feature pine boughs and holly leaves. For centuries Europeans have been using hollies to dress up their winter landscapes, indoor and out, so it seems fitting to take a look at holly and holly-look-a-likes we can use in our region.

**Hybrid Holly -- (Ilex meserveae)**
The most commonly grown holly in this region. It has spiny, lustrous leaves that are a deep beautiful green. Hollies require both male and female plants for production of the coveted red berries. A reputable nursery should be able to assist with choosing compatible male and female cultivars. Desiccation in winter winds and sun scald in the summer can be a problem so hollies need a protected location. North and easterly exposures work particularly well for growing hollies in our climate. Many hybrids are available, some faring better in winter than others, so pick one that is appropriate for where you live.

**American Holly -- (Ilex opaca)**
This is a holly for the plant collector that wants a challenge. It needs moist acidic soils and protection from excessive winds. The form is distinctly pyramidal and approaches 30 feet tall in its native region of the southeastern US. Zone 5.

**Oregon grapeholly -- (Mahonia aquifolium)** Leaves are similar to Ilex in the sense that they are a spiny, lustrous dark green; however, Oregon grapeholly has compound leaves and gets a lovely purple hue in winter. This shrub has a rather expressive form, sometimes squat and dense and other times more irregular and open. In spring it is adorned with bright yellow flowers followed by persistent dark-blue berries in the autumn. Growing 3 feet high and wide, it is perfect for smaller more protected locations. Give it some shade. Native to the northwestern region of the United States. Zone 5-6.

**Creeping mahonia -- (Mahonia repens)** Native to Nebraska’s Pine Ridge and the Black Hills, this is our version of Oregon grapeholly. Similar to its cousin in appearance, with slightly duller leaves, its outstanding fall color surpasses that of Oregon grapeholly. It only grows 10-18 inches high and has a gently creeping habit. Yellow flowers dress it up in the spring and black fruits in late summer. Once it is established it is extremely drought tolerant. It should be used more throughout Nebraska especially in drougthy situations and western Nebraska landscapes. Zone 4.
The leaves almost need to disappear before we notice them but suddenly, just in time for Christmas, they’re everywhere—berries. We’ve been paying attention to the changing, falling leaves and, without our noticing, the stage has been reset. While we’ve been busy putting up trees and wreathes and garlands, Nature has done its own decorating.

Fortunately for birds, the plants we add to our gardens for winter beauty are often the very plants they need to get them through a long, sparse winter. Placing a few shrubs and small trees near to a birdfeeder will make it a much more appealing site, protecting them from wind and predators and adding variety to their diet.

As a gift to yourself and to all the birds in your neighborhood, here are some great additions to the landscape:

**Eastern wahoo, Euonymus atrypurpurea.** This native 10-12’ shrub bears abundant, beautiful rosy-pink seed capsules that stand out vividly in late fall. A hardy, drought-tolerant shrub that is beautiful year-round but especially dramatic this time of year.

Wax myrtle, *Myrica pensylvanica*. The birds may devour these waxy, gray berries before you get to enjoy them, but *Myrica* also has semi-evergreen, fragrant foliage. It’s a tough, deer-resistant shrub for dry, infertile sites that can help prevent erosion and build up nitrogen.

**Coralberry or snowberry, Symphoricarpos.** Though not a first choice of birds, these persistent white and purplish-red berries are beautiful through the winter.

**Viburnums.** There’s no end to the options here. The bluish-black berries of blackhaw viburnum (*Viburnum prunifolium*) are a good source of food for birds in fall. For persistent fruits later in the winter, there’s American cranberrybush viburnum (*Viburnum trilobum*) with fruits that become more palatable as the winter progresses, making it a good choice for late winter feeding. Linden and sargent viburnum (*V. dilatatum* and *sargentii*) are other good choices for persistent fruit.
Perennials for Fall Color
Kristina Jensen, Nebraska Statewide Arboretum

Fall is a time to notice the surrounding landscapes. We can’t help but notice trees and shrubs turning brilliant shades of yellow, orange and red. But they’re not the only plants to have fall color; perennials are preparing for a long winter’s nap, too.

**Bluestar, Amsonia**. Dark green, willowy foliage is sprinkled with tiny blue flowers in spring. By fall, this plant becomes a firecracker in the garden with bold, golden foliage.

**Solomon’s seal, Polygonatum**. A wonderful addition to the shade garden, Solomon’s seal has pendulous white flowers in spring that become bluish-black berries in summer. The fruit, paired with yellow fall color, makes an attractive combination. Variegatum’, with its ivory-streaked foliage, is especially nice.

Other perennials for yellow fall color:
**Gooseneck loosestrife** (Lysimachia clethroides), monkshood (Aconitum), hosta, balloonflower (Platycodon), ferns.

**Bloody cranesbill, Geranium sanguineum**. With a name like bloody cranesbill, it should be no surprise that the finely textured foliage of this perennial turns crimson in the fall.

**Cushion spurge, Euphorbia polychrome**. In spring, this spurge is topped with sulfur-yellow bracts. In autumn, it becomes stained in shades of red and orange.

For red fall color, try these perennials: columbine (Aquilegia), pig squeak (Bergenia), plumbago (Ceratostigma plumbaginoides), barrenwort (Epimedium), prairie alumroot (Heuchera richardsonii), peonies (Paeonia)

For red fall color, try:
**Autumn Red Miscanthus, Miscanthus sinensis var. purpurascens 'Autumn Red'.** The early-blooming silvery plumes of this grass look great against orangish-red fall color. Interest remains throughout winter.

**Little bluestem, Schizachyrium scoparium**. A native bunchgrass with blue-green summer foliage turning various shades of red and bronze and topped with fluffy seedheads in the fall.

Other notable grasses: switchgrass (Panicum), Indiangrass (Sorghastrum nutans)

And a vine for fall, too... **Virginia creeper, Parthenocissus quinquefolia**. A fast-growing vine and considered a weed by some, virginia creeper can’t be beat with a vibrant rainbow of fall color.
Sizzlin' Summer Silphiums & Sunflowers
Bob Henrickson, Nebraska Statewide Arboretum

Having trampled through many prairies in eastern Nebraska, I have become very familiar with the big burly plants from the genus *Silphium*, also known as rosinweeds. In the prairie, these tall, bold-textured plants with bright yellow sunflower-like blossoms take center stage in late summer, a focal center among a sea of grasses. In the garden, these impressive, deep-rooted plants make a dramatic and pleasing addition to the back of a mixed border. The tall, stiff flower stalks add an interesting vertical element to the garden and the big leaves add contrast and weight to fine-textured grasses. On the prairie “plant calendar” the *Silphium* blossom is a sign that summer is almost over, while the sunflower or *Helianthus* blossom ushers in the fall.

The name sunflower refers to their habit of facing the sun from sunrise to sunset. Most of us are familiar with the common annual sunflower growing along field margins and roadsides, but the perennial sunflowers are also important prairie forbs. Ripening in fall, the seeds are ready just in time for migrating birds to gorge on as they make their way south.

In the flower garden these beauties spread rapidly by rhizomes to form impressive colonies. Sunflowers work best either competing with equally aggressive prairie plants like big bluestem and Indiangrass to keep them in check, or planted in an island surrounded by mowed grass. They’re very drought-tolerant and able to break through heavy soils; but if the soil is too rich or they get too much water they will flop over when blooming.

If you’re looking for a classic, tough prairie plant to add some color late in the season, find a place in your sunny border for these bold beauties.
Compass plant, *Silphium laciniatum*. The deeply cut, rough, leathery leaves of compass plant can grow up to 20" long, like a giant oak leaf. Mature plants send up a massive flower stalk that can reach up to 10', with clusters of large yellow flowers along the stem. Prairie grasses like little bluestem and prairie dropseed make nice, fine-textured companions to the big leaves. Most *Silphiums* need at least three years to mature but will reward you by living for decades.

Rosinweed, *Silphium integrifolium*. The dark green, thick leaves of rosinweed, stiff and rough to the touch, are a nice complement to the bright yellow flowers clustered at the top of the stems. A mature plant will give rise to many stout, erect stems that may reach 5' high and 3' wide. A dependable performer and one of the best-behaved for the garden, growing well in a variety of soils from moist to dry and excellent in clay. Try as a backdrop for other perennials or grasses.

Downy sunflower, *Helianthus mollis*. Beautiful butter-yellow flowers, blooming in August, complement the soft, grayish-green leaves. Growing up to 6' tall, this species is also called ashy sunflower because the fuzzy leaves look like they’ve been rubbed in ashes. Creeps slowly by rhizomes, making this one of the best-behaved of the sunflowers. It prefers dry, well-drained soils.

*The following natives are aggressive and best limited to prairie gardens; they are not recommended for home garden usage.*

*Cup plant, Silphium perfoliatum*. According to Neil Diboll of Prairie Nursery, “the cup plant is the single best species that you can plant for wildlife.” The bright yellow flowers are a favorite of butterflies and it ranks as the number one plant for birds, providing food (birds devour the nutritious seeds in fall), water (leaves clasp the square stems to form little cups that can hold rainwater) and the large foliage also provides cover. Give it plenty of room, because this big boy can grow up to 8' high and it self-seeds readily in open soil.

*Common sunflower, Helianthus annuus*. This species is the wild-growing ancestor of the commercially grown sunflower. It was reportedly cultivated by American Indians who selected for plants with large seeds.

*Sawtooth sunflower, Helianthus grossereurratus*. This sunflower is very vigorous, forming large, robust colonies. It can be recognized by its coarsely toothed leaves and large clusters of bright yellow 2-3” flowers. This species grows naturally in rich bottomlands and wet prairies.

*Maximilian sunflower, Helianthus maximilliani*. This impressive sunflower has bluish-green, sickle-shaped leaves folded into a trough shape and arched. In late summer stout stems may reach over 6' high, with big yellow flowers along the top 3' of stem. The stiff stems serve as perches for seed-eating songbirds in fall. Very aggressive.

*Prairie sunflower, Helianthus pauciflorus or *H. rigidus*. This widespread species is also called stiff sunflower in reference to its stout, erect stems. The blossoms, occurring singly at the tip of the central stem flower, are about 2½–4" across and have dark red centers. It grows to 6' high. Easy to grow, but can spread and become very aggressive.

*Jerusalem-Artichoke, Helianthus tuberosus*. This sunflower is neither from Jerusalem nor an artichoke. It is a perennial sunflower that produces tubers 3-5" long that have a sweet nutty flavor. Cultivated for centuries, the “earth apple” has large coarse leaves, rough leafy stems and clusters of bright yellow flowers in fall. Very aggressive and can take over an area if left undisturbed.

*More information on sunflowers, including “The Sunflower Project,” an arts and interdisciplinary curriculum for classroom usage, can be found at arboretum.unl.edu. Funded in part by the Nebraska Arts Council, the curriculum packets will be mailed to Nebraska high schools this month.*
Dealing with Drought

Justin Evertson, Nebraska Statewide Arboretum

Drought—“a prolonged period of dry weather” (Webster’s New World College Dictionary)

In Nebraska, drought is not at all unusual. Historical records and tree ring studies clearly show that drought is a normal part of the Great Plains environment. Most of Nebraska suffers from drought conditions once every seven years. What is most frustrating for everyone choosing to live on the plains is that droughts are unpredictable.

As dry as it is, however, I actually am impressed at the appearance of Nebraska’s community landscapes. A closer look reveals trees, shrubs and herbaceous plants that are suffering and dying. But for as dry as it has been, the decline is not nearly as pronounced as one might expect. It’s understandable to see green plants on irrigated sites, but where are non-irrigated plants finding the moisture to keep photosynthesis going?

To me, the plants that look the best this year are either native to the region or are native to similar climates elsewhere in the world. A few of the woody plants that continue to thrive include bur oak, hackberry, boxelder maple, coffeetree, American plum, chokecherry, coralberry, mountain mahogany, ponderosa pine, blue spruce and juniper. Our prairie forbs and grasses may not be growing robustly or flowering profusely, but they are surviving and will no
doubt thrill us again when the rains return.

In a year with little or no rain, maintaining landscapes in a lush condition can seem like an impossible challenge—and rightly so. The need to conserve water and wisely budget maintenance time should be paramount in any caregiver’s decision-making process. And yet as daunting as the task may seem, it should not be impossible to at least keep the most important components of a landscape alive so that they are ready to thrive when the rains return.

Perhaps the most important task to be accomplished when managing for drought is to prioritize both landscape components and maintenance needs. I don’t hesitate to proclaim that trees are the most valuable part of the landscape, followed by shrubs, perennial flowers and grasses, annual plantings and finally turfgrass. This assessment is based purely on the reality that in the long run trees and shrubs provide the biggest benefit to a community. In addition to the shade and wind protection that woody plants provide, estimates show that trees already save over $1 billion in utility costs each year in Nebraska. Where would we be without our woody friends?

Unfortunately in this society, turfgrass development and care seems to remain the most important landscape activity. Precious water is dumped on the lawn in a futile effort to keep it green in the heat of summer. For a typical suburban residence with automatic lawn irrigation, it is not uncommon to see water use increase nearly five-fold during the summer.

Although turfgrass does provide many important benefits to the community (reduced erosion, cooling effect, places for play, pleasing look, etc.), I’m not convinced the tangible benefits of keeping it green during dry times exceed the costs. We should not mourn for the browning of turfgrass during a drought. The reality is that turfgrass is easily reestablished when the temperature cools and the rains return. A tree, on the other hand, takes several years to be securely established in the landscape and to begin providing its amazing benefits. For such plants, a drought can quickly wreck an amazing investment for the future.

With all that in mind, here’s a few maintenance tips to consider for periods of drought:

1. Prioritize the landscape to insure the most important plants are kept alive.
2. Prepare during wetter periods for the dry times to come.
3. Let turfgrasses go dormant in the heat of the summer.
4. Trees, shrubs and herbaceous plantings should be watered deeply and infrequently. Trees and shrubs planted in the spring will need approximately one inch of water per week during the summer. Plants established in previous years may need only one or two waterings per month to get through a severe drought. Water trees at the drip line if possible.
5. Recognize the needs of individual plant species. An established bur oak requires much less moisture, for example, than a red maple or tuliptree.
6. Reduce watering in late summer. Most woody plants naturally begin shutting down their growth processes at that time and will require less moisture to survive.

Regardless of maintenance capabilities and priorities, the best thing to do to help manage for drought is to plan and develop landscapes from the outset that are able to tolerate the climatic conditions that will come. Species selection and proper placement in the landscape are vital to this effort. For years, ecologists and environmentally conscious designers have been promoting the benefits of native and well-adapted plants that will naturally thrive in the environments they are placed in. If nothing else, a drought year like this helps prove how wise such proclamations are.
Nebraska is the “Home of Arbor Day” and, as that implies, Nebraskans are tree planters, dotting our prairie state with trees that give us shade and shelter through the year. Walking through our communities, it’s easy to take trees for granted and forget our role in planting and caring for them for generations to come. There are many lessons we can take from our tree-planting forefathers... plant correctly, plant for the future and plant diversely.

J. Sterling Morton, founder of Arbor Day, planted a great diversity of trees, most of which can still be seen at Arbor Farm Historical Park in Nebraska City. It’s amazing to see these majestic old trees, and many of them are species that rarely find their way into our landscapes today.

Nowadays, our community forests are far less diverse than they should be, increasing the risk of losing them to diseases or pests. Not only do we need diversity, we also need tough trees. For a tree to be successful in the greater part of Nebraska it needs to survive drought, wind and temperature fluctuations. Here are some underutilized, tough trees that should find their way into our landscapes more.

Ironwood, *Ostrya virginiana*, is a native to southeastern Nebraska woodlands found predominantly in bur-hickory forests in the upland areas. It is very drought-tolerant and can withstand “tree pit” conditions also, but it prefers the protection of an overstory tree. Beautiful “hops” set on in June, making it look like a well-decorated Christmas tree and foliage turns yellow in fall.
Miyabe maple, *Acer miyabe*, is native to Japan. It is incredibly durable, and should be a first choice among maples for our state. Like most maples it prefers moist conditions, but holds up under the rigors of drought. It has an oval-rounded canopy, growing 30-40’ tall and has pumpkin yellow fall color.

Gambel oak, *Quercus gambelli*, is native to Colorado. It can be used as a large shrub; single-stemmed, it forms a medium-sized tree. It can withstand the rigors of wind and drought and is an excellent tree for acreages and in windbreaks, especially in central and western Nebraska.

Bristlecone Pine, *Pinus aristata*, is native to the southwestern United States. Some of the oldest living trees on earth—4,000-5,000 years old—are bristlecone pines. Though slowrowing, it can handle drought and severe winds and performs well in both eastern and western Nebraska.

Amur Corktree, *Phellodendron amurense*, is an underutilized medium-sized shade tree. Its deeply furrowed bark gives it a corky appearance. The tree is dioecious, having both male and female trees; male trees tend to be more picturesque with large branches that sweep the ground. begging to be climbed.

Ussurian Pear, *Pyrus ussuriensis*, is native to Asia. It does well with temperature fluctuations, drought and some wind, making it a much better choice than Bradford pear. It works well throughout Nebraska and has white flowers in spring and red-purple leaves in fall. Grows 25-30’ high.
Wildflowers
Bob Henrickson, Nebraska Statewide Arboretum

The first annual Nebraska Wildflower Week was observed from June 3-11, 2006! Typically, this is one of the best times of the year to walk through a prairie, with colorful wildflowers swimming among a sea of fine, abundant grasses. The prairie garden is in its prime too, with lush, green grass and abundant flowers in bloom. You may be surprised to learn that some of the most beautiful flowers you can grow in your garden make their home right here in the Great Plains. I have been growing Nebraska wildflowers for years and I’m amazed by the array of outstanding spring wildflowers that have found their way into my gardens. Like most home gardeners I strive to include a plant palette that provides color from spring to frost and to my delight, there are native wildflowers in bloom from early April to late October.

In learning more about wildflowers and prairie grasses I was surprised to learn of the many spring-blooming varieties. I assumed that most wildflowers bloomed in the late summer and fall, with the asters and sunflowers. But there are some dazzling plants waiting to be discovered and planted in your garden that bloom in late spring through early summer.

The following is a list of native wildflowers representing just a few of the many varieties available for late spring color. Not only are they showy, all of these sun- and heat-loving plants are very drought-tolerant and thrive when planted in well-drained soils.

Shell-leaf Penstemon (Penstemon...
The blue green leaves of this durable perennial are thick and fleshy forming an attractive clump the first year and giving rise to erect, stout 3’ high stems the second season. The stem leaves are evenly spaced along the stem, nearly round, clasping the stems like a clam shell. The abundant, tubular flowers rest among the leaves and bloom an incredible lavender color. Soon showy seed heads develop, turning a rich brown color in fall and remaining attractive well into winter.

**Prairie Phlox** (*Phlox pilosa*) The beauty was once a common wildflower in the moist, rich soils of low prairies in eastern Nebraska. This native perennial, with grass-like leaves and erect stems from 1 to 2 feet high, has been very dependable in the garden. The fragrant, deep pink flowers are in clusters at the end of the stems, blooming from late May into June. I have mine combined with the bright yellow lanceleaf coreopsis (*Coreopsis lanceolata*) and prairie spiderwort (*Tradescantia ohiensis*) for a delicious prairie garden combination.

**Pale Purple Coneflower** (*Echinacea pallida*) The native purple coneflower blooms by early June in my garden and continue for a month. The flower heads have pale pink drooping petals around a dark red, domed shaped disk. The flower petals seem to dance in the slightest breeze while resting atop stout, unbranched stems to 3’ high. The stems and long, linear leaves are covered with stiff hairs. The seed heads of this species remain tight well into winter and are ideal for winter interest among prairie grasses. I have mine combined with leadplant and butterfly milkweed, prairie dropseed and little bluestem for a no fuss combination.

**Leadplant** (*Amorpha canescens*)
This attractive, long-lived woody perennial belongs in every sun drenched garden. The woody stems have silvery-green foliage, densely covered with short, whitish hairs, and give rise to a deep blue flower stalk in late spring. The spike-like stalks are dusted with golden anthers and although fleeting, are incredibly showy. The plant may take several years to get establish and I cut to woody stems back to around a foot in the spring. Leadplant will grow from 2-3 feet high and wide and compliments any sun-loving native.

**Prairie Skullcap** (*Scutelleria resinosa*) I love everything about this showy wildflower. It has grayish-green rounded leaves, like mouse ears forming a rounded 12” plant by late May. Within the margins of the leaves are deep blue rounded flowers, each tipped with two small white patches, like an equal sign. The effect of the grayish leaves and the indigo blue flowers is a striking combination magnified when planted next to the native toothed primrose (*Calylophus serrulatus*), fringed sage (*Artemisia frigida*) and New Jersey tea (*Ceanothus americanus*).

**Sensitive Briar** (*Schrankia nuttallii*)
A native perennial with attractive fern-like foliage that are touch sensitive like the mimosa. The 1-3’ stems are weak, sprawling along the ground or aloud to weave in among shorter prairie grasses. In late spring numerous rounded flower heads appear at the tips of the branches. The rich pink heads look like miniature sputnik satellites, each up to an inch across, tipped with yellow anthers. This plant grows best in dry, well-drained soils and I have mine combined with dwarf blue indigo (*Baptisia minor*), wild larkspur (*Delphinium virescens*), and cobea penstemon (*Penstemon cobea*).
This spring, before rushing out to attack any dandelions that may have emerged in the lawn, do your trees and shrubs a favor and put away the herbicide. Dandelions typically emerge in mid-to late spring at about the same time many woody plants are unfurling their first tender leaves.

Unfortunately, most common herbicides used to kill dandelions in the lawn can have significant negative impacts on trees and shrubs. This is especially true in the spring when winds are frequent and the tender new growth of woody plants is most susceptible to herbicide drift. Oaks, maples, redbuds and nut trees seem to be especially vulnerable to herbicide drift. A sure sign of herbicide damage is unusual leaf curling along with stunted leaves, early in the season.

Most healthy trees and shrubs can tolerate some light and occasional herbicide drifting. Contact repeated year after year, however, can cause serious decline and even death to vulnerable plants. The better time of year for herbicide treatments of dandelions and other perennial lawn weeds is in the fall when trees and shrubs are not actively growing and are thus less susceptible to herbicide drift. In addition perennial weeds will translocate more of an herbicide to their root system in the fall as they actively move energy below ground for winter survival. This greatly increases the chance that an herbicide will kill the entire weed. Something else to consider: dandelion leaves can make a cheap and tasty addition to any garden salad. So instead of poisoning them, consider eating them instead. That is sweet revenge!
Native Shrub Brightens Spring Landscape
Kristina Jensen, Nebraska Statewide Arboretum

Spring is the time of year when one of our native shrubs really shines. Clusters of white flowers cover the branches of Amelanchier even before the leaves emerge. Amelanchier has several common names, among them "serviceberry," since in pioneer time it was often the only plant blooming for spring burials, and "Juneberry" for the blueberry-like fruits that follow in June.

The fruits appear reddish, then turn dark blue-black when ripened. They are edible to wildlife and people alike. Native Americans had many uses for the fruit, whether eaten fresh, in stews, or combined with meats in pemmican. Early North American settlers also utilized the tasty pomes, similar in taste and appearance to blueberries, for making pies, wines, jams and other fruit concoctions. These uses are regaining popularity, partially because juneberries have been found to be higher in protein, calcium, fiber and many other nutrients than either blueberries or strawberries. Scientists in Canada are working to select large-fruited cultivars for commercial purposes.

Over 25 species of Amelanchier exist in the Northern Hemisphere. Among these species, three are native to the state of Nebraska.

Saskatoon serviceberry (A. alnifolia) is found in northern Nebraska and reaches into central parts of the state. It grows up to 15' high along streambanks and hillsides. 'Regent' is a well-known hybrid with a dense, suckering habit.

Shadblow serviceberry (A. arborea) is an understory tree found in the woodlands along the Missouri River. Often multi-stemmed, this serviceberry grows up to 25' high. It prefers moist, well-drained soils, but will tolerate poorer conditions. 'Robin Hill' is a pink-flowering hybrid.

Dwarf serviceberry (A. sanguinea) is a 10' high shrub native to the northwestern corner of the state. Red twigs accent this colony-forming serviceberry that is not common in the nursery trade.

Later this month, third graders in the Lower Platte South Natural Resources District will become acquainted with serviceberries. As a part of Arbor Day festivities, the District will be distributing plants grown from a hardy seed source by the Nebraska Statewide Arboretum. The students will learn about serviceberries in the classroom and then have the opportunity to watch them grow in their own yards.

For photos, planting and other information about serviceberry, go to http://arboretum.unl.edu
No matter how small your yard or how fully-planted you might think it is, you probably have room for at least one more tree. Maybe not a giant oak, but most yards can still accommodate another small ornamental tree, or one of the delightful understory trees that are native, or adapted, to our Midwestern landscapes.

During the first 15 years we lived on our acreage we enjoyed the native woodlands that surround a ravine on the property. But we wanted a lot more variety, height, shade and structure in our landscape so we began planting species and cultivars of native and introduced, non-invasive trees and shrubs about 15 years ago. Our collection has grown to several hundred and we love them all, but here are a “delightful dozen” that rank among our favorites.

**Shantung maple** (*Acer truncatum*). This is a terrific small maple, whose leaves turn a beautiful reddish-orange in fall. Our specimen was damaged by the October 1997 snowstorm, but with a little pruning quickly recovered its oval shape. It does best in full sun but can take a little shade and still produce fall color.

**Trident maple** (*Acer buergerianum*). Even visitors who profess no interest in trees seem to notice the dainty, 3-lobed leaves and muscly trunk of this delightful small maple. The dark green leaves turn a brilliant red every fall, and our two specimens have shrugged off some major snow and ice storms.

**American hornbeam** (*Carpinus caroliniana*). “Musclewood” is a small, adaptable, understory tree with few insect or disease problems and nice orange-red fall color. It’s perfect for filling the gap between grass or groundcovers and the crowns of bigger shade trees.

**Katsuratree** (*Cercidiphyllum japonicum*). Our 13-year-old katsura towers 35' above a pathway behind the house. Its rounded leaves—red-tinged in spring, blue-green in summer and yellow in the fall—never fail to attract visitors’ interest. We like it so much we’ve planted two more.

**White fringetree** (*Chionanthus virginicus*). This tiny, slow-growing tree, which thrives in either partial shade or full sun, rewards us with a spectacular flower show every spring. A friend gave us the 1917 book *Trees Worth Knowing*, which says, “Whoever goes into the woods in May is rewarded for many miles of tramping if he comes upon a ‘snow-flower tree’ (fringetree) in the height of its blooming season...an experience that will not be forgotten.” Fortunately, you can grow one at home and save the tramping.

**American yellowwood** (*Cladrastis lutea*). This handsome, low-branching, rounded tree is mid-sized. We like its spring show of lacy white flowers, although ours...
often takes a year off between peak performances. Its bright green leaves provide a nice contrast to the darker leaves of oaks and maples.  

**Seven-son flower** (*Heptacodium miconioides*). This unusual small tree provides a late summer show of 6-inch-long clusters of creamy-white flowers. After the petals fall, the sepals turn rosy-red, producing a stunning flowering effect that lasts until Thanksgiving. Seven-son has handsome, peeling bark that resembles that of a crapemyrtle.  

**Dawn redwood** (*Metasequoia glyptostroboides*). Dawn redwood’s delightful, feathery, bright-green leaves change to rich, reddish-brown in the fall. It’s a deciduous conifer from Asia, once thought to be extinct, and grows fairly rapidly into a huge, pyramidal tree. Ours flourishes in a low, wet, open spot.  

**American hop hornbeam** (*Ostrya virginiana*). Happy in either full sun or as an understory tree, “ironwood” has elm-shaped leaves and showy spring flowers. In his *Manual of Woody Landscape Plants*, Michael Dirr writes that its autumn color is seldom effective and the leaves fall early. That has not been the case for our hop hornbeams. Instead, the leaves turn from yellow to rusty brown, hanging on most of the winter. We love the greenish-white fruits that resemble hops, too.  

**Mongolian oak** (*Quercus mongolica*). We’d grow this one for its bright red fall color alone, although its dark-green summer foliage is eye-pleasing, too. Our two specimens are low-branching with a full, oval shape and no problems.  

**Common sassafras** (*Sassafras albidum*). A pleasure in all four seasons, sassafras has bright yellow early-spring flowers and multi-shaped leaves that are bright green in summer, changing to orange, red and purple in fall. The bark is a dark reddish brown, very handsome in winter. Although suckering can occur, ours has remained a handsome, single-stemmed tree and has yet to produce a single sucker.  

**Lacebark elm** (*Ulmus parvifolia*). This is the real Chinese elm, not to be confused with the weedy, breakage-prone Siberian elms that are often mistakenly called Chinese. The lacebark has, as its name suggests, beautiful bark. It also has small, glossy-green leaves and is highly resistant to Dutch elm disease. Two great cultivars are ‘Glory’ and ‘Hallelujah’ from Arbor Village Nursery in Holt, Missouri.
Designing with foliage
Christina Hoyt, Nebraska Statewide Arboretum

Though foliage characteristics are often neglected in favor of showy flowers or fruit when choosing a plant, gardeners have begun to realize what a significant role foliage can play in the garden. As a result there are some elegant, striking, and even gaudy, plants showing up at garden centers.

Color and texture are two of the most important foliage characteristics. Color, particularly, tends to catch our attention. Whether it’s chartreuse, purple, blue, variegated or mottled, brightly colored foliage offers a very striking accent in the landscape. Generally, plants with more vibrant foliage are reserved for specimens or for brightening dark corners. Rarely are they used extensively as a backdrop for the garden.

Unfortunately, many diseased plants are similar in coloring to chartreuse, yellow or variegated plants; which makes the line between looking “sickly” and “stunning” easy to cross. When experimenting with extreme color it’s best to start with annuals or perennials. Mistakes will reveal themselves more quickly and it’s easier to move or replace a small plant than a 15-year-old shrub. Keep in mind that green is a color too; use solid green foliage generously and other color sparingly.

Variations of grey and silver foliage occur naturally in drier parts of the country. They combine well with many shades of green and can be used in masses, making them very versatile in a landscape design. Gardens featuring silver and grey-toned plants are attractive and calming, and can offer a bright spot in the evening hours.

Texture is another important component of designing with foliage. Offering a combination of textures can create variety in the garden, and a subtle contrast of texture is much more forgiving than the contrast of different colors. When viewed from a distance, the size of the leaves affects the “texture” of the design, with large leaves giving a coarse appearance and small foliage resulting in a fine-textured appearance. Using a variety of textures, fine-textured grasses alongside medium-textured roses, for instance, can add a lot of interest to the landscape. For drama, the large leaves of an oakleaf hydrangea can be paired with coralberry or fine-textured grasses. Varying, contrasting and repeating leaf types can make a pleasing, coherent design. Nature offers an infinite variety of leaf shapes (oval, heart-shaped, narrow) and leaf surfaces (fuzzy, rough, puckered, sharp or shiny) that give plants personality. The soft foliage of lamb’s ear, for example, is almost irresistible not to stroke. Shiny-leaved plants catch the sunlight and contrast nicely with duller leaves. Cactus leaves add an unexpected prickle while keeping the wary pedestrian at bay.

As with any good design, less is more. Pick a few plants to add boldness and contrast, and let the rest of the garden offer subtle repetitions and variations of a similar theme. Experimenting with foliage is a fun and easy way to enliven your garden!
Warming Winter with Native Pines
Justin Evertson, Nebraska Statewide Arboretum

Although there are several species of evergreens that can be grown in Nebraska, our state’s two native pine trees deserve special attention. Our most common pine, ponderosa pine (Pinus ponderosa), occurs in abundance in the rough, broken lands of the Panhandle as well as along the Niobrara River. Ponderosa pine has distinctive bark that mottles into attractive shades of gray, tan and brown as it matures. The tree also possesses long needles (up to 8” or longer) that helps give it a coarse, shaggy look. Ponderosa pine can grow up to 2’ per year when young and eventually reach 60’ tall and 30’ wide at maturity.

Nebraska’s other native pine, Limber pine (Pinus flexilis), is just barely so as it occurs naturally in the state only in the Pine Bluffs of extreme western Kimball County. Limber pine is named for its unique, flexible branches that can be twisted into knots without breaking. The branch flexibility gives the tree an advantage in areas of high wind and extreme snow loads, such as in the higher elevations of the Rocky Mountains where it is common. Limber pine has short, soft, gray-green needles and unique, resinous cones that hold seeds of great value to many birds. Although slower growing than ponderosa pine, limber pine can eventually reach up to 50’ tall and 30’ wide.

Both limber pine and ponderosa pine are easy to grow, extremely drought tolerant and not particular to soil needs. However, both species will struggle in heavy, wet soils and over-irrigated yards. Pines in general are best used in groups at edges of properties or as backdrops to other plantings, and of course anywhere the blocking of cold winds might be appreciated.

During winter, when the coldest winds blow, many Nebraskans find themselves wondering why they live here. This is especially true during the frigid month of January, when even a short walk to the mailbox can require significant mental and physical preparation. Although nothing can hold back the cold of winter, we can at least soften the impact of biting winds with well-placed evergreen trees. Such trees not only improve our physical comfort, they also improve our economic comfort as they can help reduce heating costs by up to 30 percent (according to TreeLink.org).
Decorate for the Holidays—Naturally
Bob Henrickson, Nebraska Statewide Arboretum

When the holiday season arrives I look forward to decorating our home and deck with wreaths, arrangements, evergreen boughs and tree decorations gathered from nature’s harvest. For me, natural crafts make holiday decorating special, from gathering the berries and branches, to the personal touches I add to an arrangement. There is an impressive variety of natural materials available to add a special glow to the holidays. You can gather in the wild, get permission from a property owner, or you can plant a variety of plants in your own garden. Plan ahead and make your holiday designs unique using the following plant material gathered from nature.

**Evergreen Boughs.** I collect a variety of evergreen branches for holiday decorating, taking advantage of the different textures and various shades of green. Evergreen branches, gathered and bunched together, are fastened with wire to form a fan shape. These fans can be wired on a railing, fence or post, using the next fan to overlap and hide the wire and bare stems. One fan may contain a variety of evergreens, but I usually place the largest needled pines at the base and the finer textures on top. A good fan may have scotch or Austrian pine at the base, with eastern red cedar or juniper branches, blue spruce, concolor fir, Canada hemlock, Douglas fir or Japanese yew. For holiday decorating, evergreen boughs can be thought of as the “filler” in the arrangement. Pine cones can be added later for highlights.

**Jolly Holly.** The best evergreen holly to grow in Nebraska for holiday decorating is the meserve holly hybrid, blue princess. This holly, with its lustrous, dark green foliage and abundant dark red fruit, grows well here on
the Plains. You will need to plant a 'Blue Prince' for every three or four 'Blue Princess' for fruit set. I use holly in indoor container arrangements where the stems are pushed into wet floral foam along with pine, spruce, dogwood stems or any plant that will need to be kept fresh. Remember to add water to the foam blocks every day to keep the materials fresh and your foliage will last for several weeks.

Bark Brilliance. Red-stemmed and yellow-stemmed dogwoods provide a nice vertical accent in evergreen arrangements or pine boughs. Try using the bright golden stems of willows or the rich purple-black stems of pussy willow. The peeling bark of river birch or white paper birch makes great wallpaper for ornaments, a stylish birdhouse, or for the nativity scene.

A Very Berry Xmas. Cut branches of fruiting shrubs, trees and vines make great holiday decorations. There is a plethora of good landscape plants to choose from but the following list is some dependable choices for wreaths, swags, mantel decorations or outdoor containers.

- **Crabapples**—The varieties 'Don Wyman', 'Harvest Gold', 'Cardinal Candy' are excellent for containers, slipped into boughs or frozen into ice luminaries.
- **Viburnum**—American cranberrybush, 'Wentworth' has bright red persistent clusters and linden viburnum has red winter fruit that looks like shriveled red raisins.
- **Coralberry**—Buckbrush, with its purplish-red fruit clustered on thin arching stems, lasts a long time in arrangements and is a favorite for wreaths and swags.
- **Rose Hips**—Rugosa and redleaf roses are some of the best for hip production.
- **Osage-Orange**—Cut the big green fruit in ½” slices and dry; spray paint gold and fasten with a hanger for the tree. Nice decorative seed patterns.
- **Black Walnut**—The nuts can be used for garland on the tree with other fruits and nuts.
- **Bittersweet**—Great combined with evergreens. Harvest clusters before the fruit opens.
- **Bayberry**—Semi-evergreen foliage has the same pleasant odor as bay candles when bruised. The waxy gray fruit clusters are a natural for almost any arrangement.
- **Acorns, hawthorne, snowberry, sweetgum, hazelnuts, common alder, baldcypress cones, sumac heads, quince fruit, eastern wahoo, winterberry holly and cotoneaster can all add a special touch to any arrangement or decorative bowl.
- **Make your own wreath backing using the long durable vines of wild grape, Virginia creeper or sweet autumn clematis.
Fall is truly a season for the senses. For gardeners, it’s time to harvest the last of the tomatoes, squash, potatoes and peppers before the season’s end. For others, fall signals the time of year for gathering and preparing edible wild plants from fields and prairies and along Nebraska’s roadsides and wooded bluffs.

Not only are certain wild plants nutritious and tasty, but gathering them offers a chance for exploration and discovery. It’s a great way to get more connected with the natural world. Make plans to visit some wild places this fall to collect nature’s bounty. Better yet, try growing some edible wild plants in your home landscape.

Listed below are a few plants that offer a delicious bounty without any help from humans.

**Pawpaw**, *Asimina triloba*. The pawpaw is a small native tree growing in the open woods and ravines of the Missouri River bluffs in southeastern Nebraska. A ripe pawpaw looks like a short, stubby banana and has a rich flavor that is a mix of banana, vanilla custard, pineapple and mango. Pawpaw fruit is very nutritious, being high in potassium, iron and calcium. Pawpaw trees are also beautiful, with large, robust leaves that turn lemon yellow in fall. They will tolerate dense shade and usually grow in colonies, forming an attractive grove. The yellow flesh of ripe fruit can be eaten fresh from the tree or scooped out and used in quick breads, cookies or muffins.

**American Plum**, *Prunus Americana*. Wild plum is a small native tree or large shrub that forms dense thickets with
sharp-tipped twigs. The abundance of ripe 1” plums in late summer or early autumn make this a favorite of wild food buffs. When ripe, the sweet yellow, red or purple fruits are fleshy and juicy. Plums can be eaten fresh in season or processed into a sauce for meats or used as a dessert. Plum jelly and jam are great for bread or toast and spiced plum jelly makes a great baste for roast meat, especially wild game.

Leadplant, *Amorpha canescens*. Among settlers, leadplant was known as “prairie tea.” The leaflets, harvested in late summer to early autumn, can be dried and brewed into a tea with a pleasant, mellow flavor. Leadplant is a small native shrub found in scattered, high-quality prairie remnants throughout much of Nebraska. The small leaflets are covered with fine hairs, giving them a silvery or lead-like appearance. Blue-purple flower spikes bloom on the tips of branches in early summer. Although found in the wild, it makes a wonderful easy-to-harvest garden plant; and the leaflets are usually good for up to three brewing.

**American Hazelnut, Corylus Americana.** This thicket-forming shrub is native to borders of woods and stream banks in southeastern Nebraska. At one time hazelnuts were so numerous on the wooded bluffs of the Missouri and Platte rivers that families would go “nutting” each autumn. Today few hazelnuts can be found in the wild, but fortunately they make an attractive large shrub worthy of planting in your back yard. Nutritious, high calorie hazelnuts can be used for baked goods, but they are also delicious in salads or cooked with vegetables or meat.

**Black Walnut, Juglans nigra.** No other nut can compare to the unique, delicious flavor of our native black walnut. They can be used in candies, baked goods and ice cream, but they also complement baked squash and yams. Black walnut caramels and toffee are outstanding, with a flavor all their own. Harvest the nuts while the husks are still green (you should be able to dent the husk with your thumb). The strong juice of walnut husks can stain almost anything, so be sure to wear rubber boots (rolling each nut back and forth under your foot will loosen the husk) and rubber gloves to remove the husks. The nutmeats will be ready to use after curing for about a month.
Autumn Cabaret
Christina Hoyt, Nebraska Statewide Arboretum

Autumn is my favorite time of the growing season because of the rich colors and textures. It is like a cabaret of rustling grasses and whirling leaves—the big finale before winter sets in. If only we could get several encores before the world fades to winter drab.

We anticipate the striking reds, blazing oranges and glowing yellows found in the maple and beech forests of the east coast. But those magnificent colors are not always part of Nebraska’s show, where leaves can progress from green to brown overnight, making “fall color” an unreliable occurrence in Nebraska. Though trees may be the first thing we think of for fall color, they don’t always produce a brilliant show. Without enough moisture, sunlight and the perfect blend of cooling temperatures, plants will not develop incredible color. And many of the trees that can handle Nebraska’s temperature extremes and drought are not known for fall color. So instead we increase our color vocabulary to include gold, tan, russet, burgundy, cinnamon, red, ocher, yellow, orange, brown and eggplant. Besides those subtle colors and the wonderful rustle of leaves beneath our feet, we can pay more attention to bark and form. Fall is a reminder to plant trees based on site conditions first and foremost, with fall color as an added bonus.

But there is more to fall than just color. Grasses are right at home in Nebraska gardens and they correspond to the natural landscape around them. The seedheads of grasses are at their peak fall and winter, turning subtle shades of burgundy, orange or blues with the shortening days. Grasses are a beautiful sight to see, whether backlit by the low light of autumn or laden with frost.

Many shrubs hang onto their fruit into fall and winter months, enlivening the landscape with bright-colored fruits that are suddenly more evident as leaves fall to the ground. And shrubs like chokeberry (Aronia), sumac (Rhus) and shrub roses (Rosa) have fairly reliable fall color.

Perennials are not generally planted for fall interest, but they can provide striking impact into autumn and winter. Coneflower (Echinacea) and Rudbeckia have prominent dark-colored seedheads that add shape and texture to the fall garden. Perennials like Amsonia and balloonflower (Platycodon) turn a brilliant yellow. Late-blooming perennials such as aster, monkshood and fall-blooming anemone extend the bloom season. Many other perennials, if cut back after the initial flowering, will give one last bloom before frost.

This season, take time to sit back and enjoy the many acts in autumn’s show—and think about bringing that show into your own garden!
Chinkapin Oak – A Terrific Tree
Justin Evertson, Nebraska Statewide Arboretum

Although nothing can replace bur oak as the king of Nebraska’s oak trees, chinkapin oak (Quercus muehlenbergii) is definitely a tree that should be planted more throughout the state and central Great Plains region. Chinkapin oak has a wide native range and is relatively abundant in the woodlands of southeast Nebraska where it can grow to over 70 feet tall. Under cultivation the tree can be expected to reach a rounded height of 40 to 50 feet growing at a rate of one to two feet per year. Chinkapin oak gets its name from its narrow, serrated leaves that somewhat resemble those of chestnut (the word chinkapin refers to trees in the chestnut family). Although not considered spectacular for fall color, the leaves do turn a nice soft yellow.

An important advantage of chinkapin oak is its tolerance of alkaline soils. In fact, the tree is often found growing on limestone bluffs where little else will grow. Thus, even on the high pH soils so common in Nebraska, the tree’s foliage will remain a dark, glossy green throughout the growing season. Once established, chinkapin oak can tolerate significant drought as well as the saturated soils of over-irrigated lawns. Other advantages include the tree’s strong branching structure, its resistance to storm damage and its ability to live for decades when properly cared for.

Although still relatively uncommon in the nursery trade, chinkapin oak is becoming more available in Nebraska nurseries every year. In addition, NSA offers seedlings grown from native trees. For those with a little more patience, chinkapin oak can be easily started from seed. Acorns mature from late August through September and they are immediately ready to germinate when they fall to the ground. In fact, the acorn will send out its first roots within a few days after sowing in the fall. Be sure to protect the seeds over the winter from hungry animals by covering with a permeable material such as window screen or wire mesh. The covering should be removed the following spring (by late April) before the above-ground stem begins to emerge.
Perennials That Beat the Heat

Bob Henrickson, Nebraska Statewide Arboretum

Every year it's the same thing, we know it's coming, but it can't be avoided. I'm talking about the dog days of summer, the summer doldrums, or simply July and August in Nebraska. The weather this time of year, with daytime highs in the 90's, lows in the 70's, test my patience as a gardener. The sultry, humid air forms a haze without any breeze, clinging to my skin. When there is a breeze it's more like an oven fan turned on high, sucking the moisture out of my parched landscape. My garden needs some rain, but it's not likely to come anytime soon.

I have to admit that gardening through the summer doldrums usually made me cranky until I decided to do something about it. I was tired of babying my landscape plants and flowering perennials through the heat of the summer. Maybe it has something to do with my concern for conserving water, but I decided not to garden with plants that need my help all the time. Instead I started using low-maintenance perennials that survive, even thrive, on their own and don't wilt in the relentless summer sun. There are a plethora of perennial plants that have adapted to grow in harsh climates, under droughty conditions and thin soils. But it takes a special plant that dares to bloom this time of year, let alone grow and survive.

I have always admired plants that seem to enjoy blooming in hot weather. Perennial favorites like the lavender-blue spikes of Russian sage, the dependable black-eyed susan, purple coneflower and 'Autumn Joy' sedum, have become mainstays in the border. We can also mention the 'Moonbeam' coreopsis, dazzling daylilies, garden phlox,
yarrow, hosta and the striking hardy hibiscus. All of the previous plants are excellent choices for the hot summer perennial garden, providing beauty without much care. Thankfully, there are many more summer bloomers to choose from that are starting to gain the attention they deserve. The next time you think about planting consider some of the following plants to beat the summer heat.

**Patrinia** (*Patrinia scabiosifolia*) The lush leaves of this plant look like those of the common Scabiosa plant forming a dense 2’ mound by early summer. The small bright yellow flowers are held in airy clusters high above the foliage in August to 4’ high. They may be cut and brought indoors, the fragrant flowers lasting a long time. They are excellent companions for almost anything and are great for hot, humid summers.

**Wild Quinine** (*Parthenium integrifolium*) This long-lived native perennial is also called American feverfew because its flowers resemble that of the common feverfew (*Tanacetum parthenium*). The large, flat-topped flower clusters, containing numerous small balls of snow white flowers, top the plants in summer. It grows in sand or clay and usually the stems fan out from a thick root to form a tidy clump about waist high. It has large, serrated leaves that are rough to the touch.

**Blackberry Lily** (*Belamcanda chinensis*) The 2” showy orange flowers of this plant, each peppered with red spots are, unfortunately, very fleeting. The pear-shaped pods, however, are persistent and contain shining, black seeds for which the blackberry lily is named. The long sword-like leaves resemble that of Gladiolus. This 3-4’ plant is easy to grow in sun or part-shade. Another species, sold as ‘Hello Yellow’, has handsome gray-green leaves and unspotted, yellow flowers on 2’ plants.

**Wild Petunia** (*Ruellia humilis*) This durable native has small petunia-like, lavender blue flowers that open in the morning and slide off by the heat of the day. Fortunately, the 1-2’ high plant gives rise to new flowers daily, extending the blooming season for weeks. These are short-lived perennials that can colonize an area by seed and for this reason combine well with short prairie grasses.

**Leadwort** (*Ceratostigma plumbaginoides*) This attractive plant produces dense growth of glossy green foliage making it a fine groundcover for sunny areas or with afternoon shade. The intense, gentian blue flowers will start appearing in late July and last through the heat of August. In the fall the foliage can turn a bronzy red, contrasting nicely with the flowers. Leaves emerge late in the spring.

**Scarlet Globemallow** (*Sphaeralcea coccinea*) This western Nebraska native covers itself with small coral red flowers from early to midsummer on ankle-high plants. The attractive leaves are covered with fine hairs, giving them a soft gray-green appearance. This sun and heat loving plant makes a fine groundcover for naturalizing among short prairie grasses like blue grama or little bluestem.

**Compass Plant** (*Silphium laciniatum*) The rigid sandpapery leaves align themselves in a North-South direction to escape the direct rays of the midday sun. The large leaves can be up to 15” in length and are deeply cut like a giant pin oak leaf. The plant flowers in August with dozens of large yellow sunflower-like flowers along a 5-7’ rough, tough stem. It benefits from full sun, poor soil and being ignored. Too much TLC results in lanky weak plants. Bold and impressive!

**Dotted Gayfeather** (*Liatris punctata*) The dotted gayfeather is the most drought tolerant of the gayfeathers, with roots extending deep in the soil. It has microscopic dots on the underside of the leaves. In late summer the stiff flowering spikes are covered with feathery clusters of purplish-pink flowers to 2’ high. Each plant has a corm that can live for decades and give rise to dozens of flower stalks each year. This is one tough
Ginkgo: A Living Fossil
Justin Evertson, Nebraska Statewide Arboretum

Few trees are more awe-inspiring than the ginkgo (*Ginkgo biloba*). Known as a "living fossil," it's one of Earth's oldest tree species and has managed to survive for over 150 million years. In fact, it rubbed elbows with dinosaurs for much of its existence.

Although now nearly extinct in the wild, the fossil record shows that the ginkgo used to grow in abundance throughout much of the world, including North America. It was native in Nebraska over 70 million years ago.

Since its rediscovery by western botanists in China and Japan around 1700, the ginkgo has been planted throughout much of Asia, Europe and North America. The first ginkgos are thought to have been planted in Nebraska in the late 1800s. Today, many ginkgos can be found in the state including large specimens in Lincoln, Kearney and Omaha and an impressive grove at Arbor Lodge State Historical Park in Nebraska City. Though not as reliable in the western part of the state, some specimens are surviving there with extra care and protection.

The ginkgo is respected enough by the nursery industry to have been selected as the Tree of the Year for 2005 for the Great Plains for the Great Plains program. A joint effort of the Nebraska Nursery and Landscape Association and the Nebraska Statewide Arboretum, the Great Plants program selects and promotes exceptional plants well-suited to the region.

Recently, the gingko has received significant attention for its medicinal properties. Extracts of the leaves are used in prescription and over-the-counter medications to aid blood circulation and improve memory.

The tree can grow up to 60 feet tall and 50 feet wide and its distinctive fan-shaped leaves often turn a nice golden yellow in the fall. One bit of caution: seeds produced by mature female trees over 20 years old can give off a strong, rancid odor after they fall to the ground in late summer and fall. For areas where this smell could be a problem, it is advisable to plant male trees, which are the more common form sold in most nurseries.

So seek out a ginkgo. When you find one, close your eyes and listen carefully to the fluttering leaves and perhaps you will be able to imagine the sound of a Triceratops munching some leaves or an Apatosaurus browsing in its branches or even a Tyrannosaurus snoozing nearby.
Vines: The “Incredibles” of the Garden
Christina Hoyt, Nebraska Statewide Arboretum

Vines are much like superheroes. They have a notorious reputation and seem to gather either fan clubs or mobs with weed whackers wherever they ramble. We hate them for their uncontrolled behavior, yet love them for their ability to conquer the aesthetic evil in our gardens. They go where no shrub goes, shimmying up walls and defying harsh elements, protecting slopes from erosion and softening structures. There are a few vines whose superhero tendencies should be unleashed with caution (Virginia Creeper, Trumpet Vine, Boston Ivy) and other vines are outright noxious, the Kudzu of the south, and shouldn’t be messed with.

How do we know what vine to plant? No one would call in Superman to defend Gothenburg, nor would anyone expect to see Spiderman flying through the night. Nor should anyone ask clematis to scale a wall without support or Virginia creeper to stay in a nice tidy corner. Vines are created differently, and have specific characteristics that make them work for different tasks.

Only clinging vines, vines that grow with the assistance of adhesive disks or adventitious roots, can scale walls or smooth surfaces. They have small sticky pads that hold the vine to the surface and allow it to climb. Clinging vines tend to be some of the more aggressive vines. For example, Boston Ivy (Parthenocissus tricuspidata) can scale three stories, growing out of compacted soil, and continue to grow about three feet a year! English Ivy (Hedera Helix), an evergreen, and the native Virginia Creeper (Parthenocissus quinquefolia) are other examples. On rough surfaces plants like the elegant but slow-growing climbing hydrangea (Hydrangea petiolaris) sprout roots from the stem and hold the plant to the surface.

Vines that do best on poles, arbors or trellises climb by one of two methods: either twining (the plant twists itself around the object) or by tendrils, little finger-like appendages that attach to the surface. Most vines fall into one of these categories, giving an array of options to the gardener. Twining climbers like bittersweet (Celastrus scandens), wisteria (Wisteria spp.) and trumpet honeysuckle (Lonicera sempervirens) work well on poles or arbors. For arbors and trellises, the best choices are vines that climb mostly by the means of tendrils like the more aggressive grape vine (Vitis spp), lemon lace vine (Fallopia aubertii ‘Lemon Lace’), chocolate vine (Akebia quinata) or the less aggressive clematis.

With all of the possibilities, it is important you check the vine’s credentials to make sure it will work for your site: how it climbs, how aggressive it is, how much support it needs and what it needs in terms of sun, moisture and type of soil. Any reputable nursery will be able to help you choose. So next time you have aesthetic evils lurking in your garden, don’t forget to call in the vines!
**Redbuds**

Kristina Jensen, Nebraska Statewide Arboretum

In early spring, when most plants are just beginning to wake up from a long, cold winter, there is a native tree putting on quite a show. *Cercis canadensis*—or redbud—is among the first to appear in the season with bright magenta buds opening to rosy blooms. The blossoms remain for two to three weeks and are quickly followed by shiny, heart-shaped leaves. The leaves emerge red fading to dark green for the summer, and then become a brilliant yellow in autumn. After the leaves fall, peapod-like fruits persist on zigzagged twigs. Smooth, dark brown bark also adds great winter interest, especially as it becomes scaly and cinnamon-colored with age.

Redbuds are found in southeastern Nebraska with their native habitat being along woodland edges. They grow to a height of 20’ and branch low to the ground. This ornamental quality makes them an excellent choice for framing houses and accenting patios. Redbuds can also be used as understory trees that provide beautiful canopies for spring bulbs. Butterflies, honeybees and a wide array of birds visit the trees as a food source, and early American settlers used the blossoms to spice up salads.

This spring, third graders in the Lower Platte South Natural Resource District (LPSNRD) will become more acquainted with redbuds. As a part of Arbor Day festivities, LPSNRD distributed redbud seedlings grown from native seed sources by the Nebraska Statewide Arboretum. The students will learn about redbuds in the classroom and then have the opportunity to watch grow them in their own yards. What a wonderful way to celebrate Arbor Day!
Cottonwoods
Ryan Chapman, Nebraska Statewide Arboretum

Nebraska's state tree, the Eastern cottonwood (Populus deltoides) has a rich history. Native Americans used the trees for many things from toys and musical instruments to sacred poles. Trappers used the massive trunks to make canoes. When the pioneers came through they used cottonwoods as landmarks and boundaries when making claims on land. One of the more admired aspects of the cottonwood is the rustling sound the leaves make as they clatter together in even the slightest breeze. In Nebraska at least, this rustling sound has helped put many a camper to sleep.

Until being damaged by a storm, the National Champion Eastern Cottonwood was located near Seward, Nebraska and stood over 85 feet tall with a circumference of 36 feet. Being native to river and stream valleys, cottonwoods prefer moist soils. Because wildfires and flooding have been reduced since settlement, cottonwood has sprouted abundantly along most of Nebraska's rivers and streams. Cottonwoods are large fast-growing trees and are especially admired for the quick shade and shelter they produce. A lone, old cottonwood can also make a bold-looking figure in the winter landscape.

Cottonwoods are both respected and despised for the billowing mass of fluffy seeds they produce (hence the species its common name). Although many people admire this “summer snow” many others dislike the clogged window screens and air conditioning coils that can result. In addition to the seed mess, the tree's potentially massive size and tendency to drop branches in storms, prevents cottonwood from being recommended for most yards. However if you really desire a cottonwood, the best ones are those collected natively. In fact you can do as many pioneers did and just plant a branch collected during early summer (approximately 12” long) in moist soil. Give your new tree plenty of space and water, and you'll soon be enjoying the peaceful and familiar sound of its rustling leaves.
Signs of Spring
Ryan Chapman, Nebraska Statewide Arboretum

Spring-blooming bulbs are some of the best flowers to usher in spring. Though most are not native, they tend to fit well into gardens by extending the season of interest. If naturalizing (spreading) species are selected, bulbs can be considered low maintenance perennials.

One of the places bulbs can be planted is into warm season turf lawns which green up slowly. This provides early color before the grass greens up. Foliage can be mowed when the flowers have withered and the grass breaks dormancy.

When selecting bulbs, there are many different types to consider. Undoubtedly tulips are the most well-known of the bulbs. Tulips bloom in mid to late spring, with an entourage of different colored flowers that are excellent for cutting. Tulips that are referred to as botanical tulips should be selected for their ability to naturalize unlike the majority of tulips which are often short-lived and need periodic replacing.

Checkered Lily (*Fritillaria*) is an unusual bulb with nodding flowers on slender stems. The purple, mauve, or white flowers have a distinct checkered pattern.

*Crocus* (*Crocus*) is one of the earliest blooming bulbs, often peaking up through the snow in bicolored varieties or in pinks, purples, whites and yellows. The buds are oval in shape when closed and open with three inner and three outer segments. Since crocus bloom for only a few weeks, mixing varieties will extend bloom times more than a month.
Daffodil (*Narcissus* hybrids) flowers have a trumpet-like structure fused to overlapping petals. They come in a variety of whites, pinks, yellows and oranges, blooming in early to mid-spring. They make excellent cut flowers but should not be placed in water with other flowers as the daffodils' sap will kill them. Unlike tulips, daffodils are shown to be resistant to deer, squirrels, gophers and rabbits.

Glory-of-the-snow (*Chionodoxa* sp.) is a good neutralizer sometimes seen growing in lawns. Flowers are star-shaped with strappy petals in colors of lavender, blue and white.

Hyacinth (*Hyacinthus orientalis*) emerge with the appearance of a green traffic cone that emerges in blue, pink, purple, rose or white flowers in mid-spring. They are frequently found in grocery stores in the winter because they are easy to force. Though they don’t naturalize, the strong fragrance makes them particularly appealing, both in the garden and as cut flowers.

Hyacinth, grape (*Muscaria armeniacum*) blooms in April and May with blooms of tiny bell-shaped purplish or blue flowers clustered on a stalk. They often last more than three weeks and are excellent for cutting.

Scilla (*Scilla siberica*) is one of the best naturalizers, blooming with blue star to bell-shaped nodding flowers in March and April. It is also sometimes incorporated into turf grass, offering a sign of spring throughout the yard.

Snowflakes (*Leucojum sp.*) are a mid-spring bloomer that naturalizes readily, with white bell-shaped flowers that dangle from long sturdy stems.

Squill (*Puschkinia sp.*) is a naturalizing bulb blooming bluish-white in early spring. Squill can also be used in a lawn setting.
Dogwoods
Christina Hoyt, Nebraska Statewide Arboretum

There are very few shrubs that have the following of enthusiasts dogwoods have. They're some of the best-known shrubs around. For centuries dogwoods have been used to cure aches and fevers; make wines, jams and tools; and even give a “charm” of good luck. Dogwoods belong to the genus *Cornus* which contains many species native to the United States, Asia and Europe. In nature dogwoods thrive in the understory conditions at the forest's edge. They can belong in the most refined of landscapes, or the most wild.

Dogwoods are grown for their attractive flowers, fruits, bark and fall color. They make a great habitat and food source for a variety of wild critters. The berries—in whites, reds and blues—are soon snatched up by birds. Dogwoods can be identified by their distinct falsely-parallel venation, opposite leaves (all but pagoda dogwood) and prominent lenticels.

While most people immediately think of flowering dogwood, native to the eastern United States, there are many other species more adapted to Nebraska’s climate. The tried and true...

**Corneliancherry Dogwood**, *Cornus mas*, is known for its early spring bloom. It is quite a site to be walking along in early march and see this swath of yellow. Its fruit can be used to make jams. Probably one of the most tolerant dogwoods, adapted to high pH and clay soils as well as to drought. Will grow 20' high and wide. Native to Europe and Asia.

**Redosier dogwood**, *Cornus sercis*, is common to the landscape. Several cultivars are available in varying heights. Its twigs are red in the fall and winter. Wildlife likes this shrub. Does fairly well in the drier part of Nebraska where foliar disease isn’t a problem.

**Grey dogwood**, *Cornus racemosa*. A tough dogwood more unrefined than most of its cousins though it works well in naturalized landscapes. Often grows 10' high and wide.

For the brave at heart....

**Kousa dogwood**, *Cornus Kousa*, is an elegant dogwood that is seldom seen in the landscape. Flowers are actually bracts that appear in the spring followed by red fruit in the fall.

**Flowering dogwood**, *Cornus florida*. A low-branching and spreading tree known for its showy bracts, red fruit and bright red fall color—but only under the right conditions, which may be rare in Nebraska. This dogwood is for the gardener with protection and patience.

**Pagoda dogwood**, *Cornus alternifolia*. An elegant dogwood similar to *Cornus Florida* in form, but a far better choice for Nebraska. White blooms in spring are followed by clusters of black fruit mid-summer. Needs protected, moist, well-drained understory conditions.
Growing trees in Nebraska can be a risky proposition. If wind, hail, ice storms, tornadoes, droughts, hot summers and cold winters don’t kill a tree, insects, diseases and people often seem ready to finish the job. Thank goodness for hackberry (Celtis occidentalis). This tough-as-nails cousin to the elm has proven its worth in yards, parks, farmsteads and shelterbelts across the state.

Hackberry possesses many positive attributes that make a good tree for the Great Plains. Its broad, arching growth habit makes it an ideal species for street side plantings; its tough character makes it very useful in parks and other public spaces; its wonderful warty-stucco bark and clean branching gives it a unique natural character; it’s native to the region and thus uniquely acclimated to the Great Plains environment; it suffers from few disease or insect problems; it tolerates both wet and dry soils; and its fruits are prized by cedar waxwings and other colorful birds.

Because of its subdued nature (it lacks showy flowers and fall color), however, hackberry has fallen out of favor with many people. In fact, the tree can be very difficult to find at nurseries and garden centers. Fortunately, hackberry is an opportunite species and seedlings can often be found growing in alleys, woodlots and other out-of-the-way places within a community. Obtaining the tree is often as simple as transplanting one from elsewhere. For those wishing to move a small hackberry into their landscape, the best digging time is in the fall after leaf drop and again in late winter/early spring before the tree starts waking up from its winter nap.
Holiday Baking with Native Fruits and Nuts
Justin Evertson, Nebraska Statewide Arboretum

Holiday baking often brings to mind tasty dishes made with common fruits and nuts like apples, pumpkins and pecans. Before the advent of the modern grocery store, such baking might also have included many hand-picked native fruits found growing in the wild of a given area. In the Great Plains, more than thirty different types of fruits and nuts have been incorporated into baking. Some of the better ones include:

**Persimmon:** The berry-like fruit of persimmon is often used in the baking of breads, cookies and fruitcakes. One of its best uses, however, is in bread pudding, where its rich flavor stands out. Persimmons are small forest-edge trees. Although the tree is not common in the Great Plains, its fruit can be found at specialty markets and even some grocery stores.

**Berries and Plums:** A relatively simple way to use native fruits such as gooseberries, buffaloberries, chokecherries, plums and blackberries is to bake them into a pie. Such fruits are also good in breads and muffins.

**Walnuts:** Native black walnuts have a strong, somewhat “wild” flavor that can enhance almost any dish that uses nut meats including breads, cookies, cakes and fudge. Walnuts can also garnish main dishes such as roasts, potatoes and pastas. Walnuts grow in abundance throughout much of Nebraska and are usually in good supply – just follow the squirrels to a local tree.

**Hazelnut:** Hazelnuts are born on five to ten foot tall shrubs that often form thickets in ravines, along rocky hillsides and near creek banks in the eastern Great Plains. The nuts are formed in clusters and are enclosed in a leafy husk – giving the fruit a beak-like appearance. The nuts are edible raw, but have better flavor when cooked. Hazelnuts have a myriad of uses including in cakes, breads and sandwich spreads and they are also great with salads and rice dishes.

Several of the above dishes and many more that utilize native fruits can be found in various recipe books including *Wild Seasons—Gathering and Cooking with Wild Plants of the Great Plains* written by Kay Young, a naturalist from Lincoln, Nebraska. *Wild Seasons* contains over 200 recipes utilizing more than 50 different plants. Recipes can also easily be found on the internet. A simple query on one common search engine listed over 100 entries for pawpaw bread alone. This holiday season, make a squirrel or two mad and incorporate some native fruits into your baking.
Ornamental Grasses Enhance Fall Landscapes
Bob Henrickson, Nebraska Statewide Arboretum

Ornamental grasses are key plants in the natural landscape—providing seasonal beauty with colors and textures only they can provide. Many gardeners are discovering the many benefits ornamental grasses bring to the garden while creating a more diverse and adaptable landscape for the Great Plains. There is an ornamental grass for any garden situation. They are very easy to grow when provided a well-drained soil and sunny conditions. Ornamental grasses are generally free of garden pests and require little, if any irrigation once they’re established. Perhaps no other group of plants can offer such a huge array of textures, forms, sizes and colors as grasses. Make plans to include a few of the following ornamental grass selections in your garden next spring and transform your landscape into a array of long linear leaves and fine stems.

Native Grasses of the Great Plains

**Junegrass, Prairie (Koeleria pyramidata)** native, cool season bunch grass with gray-green leaves; blooms early June with narrow, erect seed heads; needs well-drained, dry soils; can be short-lived in heavy soils; will reseed making them ideal for naturalizing; 18” high.

**Grama, Blue (Bouteloua gracilis)** native to dry prairies; tufted with thin, wiry leaves to 8”; 1” eyelash-like seed heads top thin stems to 18” in late June; nice decorator plant or mass for prairie style lawn.

**Grama, Sideoats (Bouteloua curtipendula)** mounds of gray-green foliage; numerous narrow flower stalks with oatlike seed heads held on one side of the stems, to 3’ h; bronze-orange fall color; straw in winter.

**Bluestem, Big (Andropogon gerardii)** impressive native of the tall grass prairie; rich, green leaves to 2’ by the end of June; flowering stalks in August up to 6’ high; seed heads resemble turkey’s foot; reliable fall color in copper, rich orange, with maroon tones; may grow floppy if shaded; wet or dry soils.

**Indiangrass (Sorghastrum nutans)** clump former with blue-green leaves and golden, feathery seed heads held above leaves in fall to 6’ high; seed heads move with the slightest breeze; provide moisture retentive soils for best results; they will reseed.

**Lovegrass, Sand (Eragrostis tricoides)** native to sandy soils with leafy upright flowering stems to 4’ h; masses of airy, fine textured seed heads in August; self sows manageably in loam and readily in sand but easily managed; early spring green appreciated; will be floppy in shady conditions or excess water.

**Dropseed, Prairie (Sporobolus heterolepis)** native bunch grass with thin, ribbon-like leaves form 2’ mounds; delicate seed heads appear in late summer and remain attractive through fall; attractive when back lit and scented; foliage turns deep orange to light copper; likes it dry and never needs dividing.

**Bluestem, Little (Schizachrium scoparium)** dependable native bunch grass with fine-textured bright green or light blue
leaves to 2’ tall in summer; the late summer flowers dry in fall, becoming silvery and remain attractive through winter; avoid highly fertile soils or excessive moisture, heavy mulching.

**Switchgrass (Panicum virgatum)** many nice selections of this dependable native; ‘Shenandoah’ tight clump to 4’ with red in the summer foliage; ‘Dallas Blues’ outstanding tall plumes in fall; ‘Heavy Metal’ nice blue-gray foliage; leaves with nice orange-yellow fall color.

**Hardy Exotic Grasses**

**Blue Fescue, Dwarf (Festuca glauca)** Lovely bunch grass with powder blue foliage to 10”; ‘Elijah Blue’ is the most dependable; must have full sun and well-drained soils for longevity in the garden; native to Europe.

**Carex or Sedge**- many exciting yellow and white variegated forms selected from plants native to Japan and China. many different grass-like plants in wide variety of color, form, and size for wet or dry soils, sun or shade; there is a Carex for any garden situation; too little known and too little used! Carex grayii and Carex muskingumensis perfect for the bog.

**Hairgrass, Tufted (Deschampsia caespitosa)** look like tufts of long, thin hair topped by masses of loose, airy seed heads in late spring; consistent moisture for best performance; full sun to part shade; 15-18” high and wide; native to Europe.

**Miscanthus** - showy grasses of many shapes and sizes, ranging from 3 to 12’ tall; feathery plumes top plants in fall with new cultivars providing colorful foliage and better flowers; cut back to ground in spring; prefers full sun and will topple if planted in too shady of conditions. ‘Autumn Red’ 3-4’ early bloomer with fall color; ‘Malepartus’ showy seed heads, early; ‘Strictus’ with yellow bands on the foliage.

**Oatgrass, Blue (Helictotrichon sempervirens)** a western Mediterranean native; clump-forming grass with intense blue leaves to 2'; delicate flower stalks appear in late spring; suffers in poorly drained soils. Zone 4.

**Pennisetum, Chinese (Pennisetum alopecuroides)** narrow-leaved bunch grass with foxtail-like silvery-white plumes in late summer; typically 2-3’ high; stunning in groups or masses; native to China.

**Ravennae Grass (Saccharum ravennae)** native to the Mediterranean region; clumping grass forming 4’ wide gray-green mounds of foliage by August; large plummy flower heads are produced in late August on stalks up to 12’ tall; excess moisture or fertility encourages lax growth; cut to ground in spring.

**Reed Grass, Feather (Calamagrostis x acutiflora)** deep green, lustrous foliage with loosely feathered flowering stalks in early summer; they constrict to narrow buff-colored plumes by fall and remain attractive all winter; easy to grow in most soils, but best in well-drained fertile soils; native to Europe. ‘Karl Foerster’ is a popular selection for good reason; ‘Overdam’ foliage has cream-white stripes; ‘Striga’ earliest to bloom, very upright; very well behaved grass.

**Reed Grass, Korean (Calamagrostis brachytricha)** native to woodland edge in Asia; glossy green foliage and red tinted feathery flower heads in September create strong vertical plant; the showy flowers fade to silvery green through fall; prefers consistent moisture but is easy to grow in most soils; excellent in containers; 3-4’ high.
Rethinking Shelter Plantings

Justin Evertson, Nebraska Statewide Arboretum

Since the first settlements in the region more than 50 years ago, trees and shrubs have been planted to protect people, livestock and soils from the harsh Great Plains climate. Although shelterbelts are typically associated with farms and ranches, they are also used to protect and improve important community features such as parks, schools, large public properties, acreages, subdivisions and commercial areas. Shelterbelts also provide habitat for wildlife, they help reduce snow drifting and help screen unsightly views.

Shelterbelts became very common in the Great Plains during and immediately following the Dust Bowl years of the 1930s. Such plantings were promoted by state and federal governments to help prevent soil erosion and improve crop production. The shelterbelt design has changed little from that era. Most still consist of just a few species of plants, including a row or two of evergreens, planted in straight lines. Time has proven this traditional method of design to have several shortcomings:

A lack of plant diversity can lead to large sections of a shelterbelt dying quickly when certain diseases, insect pests or weather events impact a planting. Recently, this has become a very serious problem in southeast Nebraska with the sudden loss of many Scotch pines (Pinus sylvestris) from Pine Wilt Disease (see article on back). Scotch pine has become the most commonly planted tree around farms and acreages and it is possible that millions of trees in the region could die in the coming years.

Evergreens planted tightly in rows can suffer from several needle blight diseases in the more humid air of eastern Nebraska.
Species choices often do not reflect soil and topographical changes that occur within the planting line of many shelterbelts. To help improve the long-term success of shelterbelt plantings in and around communities, the Nebraska Statewide Arboretum has developed the following design recommendations. The suggestions are reflected in the accompanying design drawing and recommended species lists.

Shelterbelts should contain a broader diversity of trees and shrubs than they have in the past. This does not mean planting one of everything, but rather the use of several species in complementary groupings. A good rule of thumb is to limit any single species to no more than 20 percent of the total planting.

In the more humid air of eastern Nebraska, evergreen trees are often more prone to foliar diseases. This is especially true where trees are planted tightly together, as in many older shelter plantings. For this reason, new shelterbelts in eastern Nebraska should never be a solid wall of evergreens, but should include many deciduous trees and shrubs. In fact it is very possible to have an effective shelterbelt here with no evergreens at all.

In the more arid western Nebraska, evergreens are less prone to foliar diseases and in general are better able to survive the frequent drought conditions than most deciduous types. As such, evergreens will likely be a larger component of a shelterbelt in the western part of the state.

Several species of deciduous trees and shrubs hold their leaves well into winter or have denser branching that allows them to block more winter wind. Such plants can alternatives to evergreens and include white oak, swamp white oak, shingle oak, boxelder maple, wayfaring tree viburnum and American plum, among others.

Species selection should better reflect soil conditions. More specifically, species selection should change when soils move from dry uplands to wetter bottom areas. Many shelter plantings go up and down slopes without any change in species.

**Recommended Species**

Certain plants lend themselves better to the tough conditions of a shelterbelt where they are often expected to survive on natural precipitation only. The following is a partial list of some of the most reliable species that can be used in shelter plantings. An E indicates plants suitable primarily to the eastern third of the state while a W is for plants that are better adapted to the more arid environment of western Nebraska. All others are considered to be adaptable to most of the state.

**Medium/Large Deciduous Trees**
- *Acer ginnala* - Amur maple (E)
- *Acer miyabei* - Miyabe maple (E)
- *Acer negundo* - boxelder maple
- *Acer tataricum* - tatarian maple
- *Aesculus glabra* - Ohio buckeye
- *Amelanchier alnifolia* - serviceberry
- *Catalpa speciosa* - northern catalpa
- *Celtis occidentalis* - hackberry
- *Eleagnus angustifolia* - Russian olive (W)
- *Euonymus bungeanus* - winterberry euonymus
- *Fraxinus nigra* - black ash
- *Fraxinus pennsylvanica* - green ash
- *Gleditsia triacanthos* - honeylocust
- *Gymnocladus dioica* - coffeetree
- *Juglans nigra* - black walnut
- *Malus* spp. - crabapple
Phellodendron amurense - Amur cork tree
Populus deltoides - cottonwood
Ptelea trifoliata - hoptree (E)
Quercus bicolor - swamp white oak (E)
Quercus gambelii - gambel oak
Quercus macrocarpa - bur oak
Quercus muehlenbergii - chinkapin oak (E)
Ulmus spp. - elm hybrids
Ulmus americana - American elm

Evergreen Trees
Abies concolor - concolor fir
Juniperus spp. - cedar/juniper (W)
Picea abies - Norway spruce (E)
Picea glauca - Black Hills spruce
Picea pungens - Colorado spruce
Pinus aristata - bristlecone pine (W)
Pinus banksiana - Jack pine
Pinus cembroides - pinyon pine (W)
Pinus flexilis - limber pine
Pinus heldreichii - Bosnian pine (E)
Pinus mugo - mugo pine
Pinus nigra - Austrian pine
Pinus ponderosa - ponderosa pine
Pseudotsuga menziesii – Douglasfir

Tough Shrubs
Caragana arborescens - Siberian peashrub
Cercocarpus montanus - mtn. mahogany (W)
Cornus drumondii - roughleaf dogwood
Cornus mas - cornelianberry dogwood (E)
Cotoneaster acutifolia - Peking cotoneaster
Juniperus spp. - juniper
Prunus americana - American plum
Prunus tomentosa - Nanking cherry
Prunus virginiana - chokecherry
Rhus spp. - sumac
Ribes spp. - currant
Rosa rugosa - rugosa rose
Sambucus canadensis - elderberry
Shepherdia argentea - silver buffaloberry
Syringa spp. - lilac
Viburnum lantana - wayfaringtree
Viburnum lentago - nannyberry viburnum (E)
As the first hints of autumn begin to creep in, the late summer landscape becomes speckled with the yellow hues of goldenrod (*Solidago* spp.). Because fall is also the major allergy season, goldenrod is often considered one of the causes of hay fever. In reality, goldenrod has absolutely nothing to do with this malady. In fact most plants with colorful flowers do not cast their pollen to the wind, but rather work for the affections of flying insects to spread their fertility. The culprit is ragweed, which releases vast quantities of pollen into the September air from tiny, green, nondescript flowers. But goldenrod comes into its glory at the same time, lining roadsides with showy drifts of yellow and gold. Guess which catches the blame?

The goldenrods (genus *Solidago* and *Euthomia*) are a large group of plants native to woodlands and prairies. About 16 goldenrods are native to Nebraska. Members of the sunflower family (Asteraceae), a close look at the showy flower clusters of goldenrod will reveal they are comprised of great numbers of tiny yellow daisies.

There are many types of goldenrod native to the prairie regions. One of the most common, late goldenrod (*Solidago gigantea*) is Nebraska’s state flower. In late summer, it bursts on to the scene in prairie areas and road ditches across the state. Another distinctive native is stiff goldenrod (*S. rigida*), which is noted for its distinctive flat plates of yellow flowers. Several goldenrods make great additions to the flower garden, including:

- **Showy Goldenrod** (*S. speciosa*) is a prairie native with very attractive wands of blazing yellow held above the foliage.
  - 'Crown of Rays' has large, golden, crown-like flowers on stiff, 2-3’ tall plants.
  - 'Wichita Mountains' possesses very distinctive bottlebrush like spikes of yellow flowers.
  - 'Golden Fleece' is a smaller goldenrod with arching sprays of butter-yellow flowers.
  - 'Fireworks' is a distinctive 3-4’ tall selection from the eastern US with lacy, radiating, long lasting blooms of yellow-orange.

Goldenrod is a beautiful and easy-to-grow plant for the landscape or perennial border. This fall, enjoy some in the prairie or plant some in your own garden. And remember to tell the neighbors that goldenrod is completely innocent of the hay fever charge.
"Dream Flowers"—Attracting Butterflies to Your Garden
Karma Larsen, Nebraska Statewide Arboretum

Almost any flower garden will attract butterflies, but if you’re trying to attract as many different varieties of butterflies, in as many different stages of life, for as long as possible, here are some of the plants you might want to include:

Many butterflies will lay their eggs only on the particular plants the caterpillar will need to eat once it hatches. For monarchs, that includes any plants in the milkweed family—butterfly milkweed, swamp or smooth milkweed, etc. Swallowtails lay their eggs on members of the parsley family—dill, fennel, Queen Anne’s lace, etc. The caterpillars of viceroy butterflies feed on willows. Other good trees and shrubs for butterfly larva include birch, cherry, crabapple, plum, buckeye, etc.

Asters or daisies are other good food sources—coreopsis, rudbeckia, coneflowers, asters, yarrow, etc.

Good nectar sources for the mature butterfly are bright-colored (lavender, purple, pink, red), fragrant flowers with “nectar guides.” Asters and milkweeds are good nectar sources, along with lilies, bee balm, gayfeather, goldenrod, phlox, etc. Flowering shrubs like viburnum, butterfly bush and lilacs are also good choices.

Native grasses like Indiangrass, bluestem and switchgrass provide good resting and hiding places. And one of the easiest recommendations to follow is to leave a weedy patch somewhere in your yard since clover, violets, thistles and fleabanes are also important parts of their diet.
The garden seems to catch its breath around the Fourth of July. After the rowdy days of June, when many perennials are at the peak of their flowering, there is a bit of a lull as summer heats up. Thankfully, July is when the daisies really kick it into high gear.

The daisy or sunflower family (Asteraceae) is one of the largest families of flowering plants on earth, and its members have long been important garden plants. Shasta daisies (genus *Leucanthemum*) are classic examples, having graced cottage gardens with their bright white flowers for centuries. The butter-yellow daisies of Coreopsis or tickseed (genus Coreopsis) are also common sights in summer gardens and landscape plantings, especially the popular cultivar 'Moonbeam'. Black-eyed Susan (genus *Rudbeckia*) is another standard daisy beloved by generations of gardeners.

It’s hard to imagine a garden or landscape in America without purple coneflowers (genus *Echinacea*). With their raised central cones and drooping ray flowers, purple coneflowers are both beautiful and dramatic. The Midwestern species *Echinacea purpurea* is the most widely available in the horticultural trade, but our native species *E. pallida* and *E. angustifolia* are also excellent garden plants. Recent breeding efforts at the Chicago Botanical Garden have resulted in a series of new hybrids with exciting colors, including the cultivar 'Orange Meadowbrite', which is taking the gardening world by storm.

As if there weren’t enough garden daisies to choose from at your favorite nursery or garden center, our Nebraska prairies are graced by an array of sunflowers that are still waiting to gain greater appreciation in American horticulture. Examples include prairie coneflowers (genus *Ratibida*), golden asters (genus *Chrysopsis*), false sunflower (*Heliopsis helianthoides*) and silphiums (genus *Silphium*). No prairie garden, or landscape designed to reflect a sense of the prairie, should be without these signature plants.

In addition to being beautiful and blooming during the summer doldrums, daisies have the added benefit of attracting butterflies to the garden.

Consider the daisies. There’s no better group of plants to help us get through July, or to reflect a sense of Nebraska in our gardens and landscapes.
Why would anyone want to landscape using prairie plants? Prairies, after all, once stretched from horizon to horizon, vast open spaces that hardly resemble your corner lot in the city. Many gardeners and landscape professionals are discovering that prairie wildflowers and grasses can be used, adopting a more natural look to the conventional, well-manicured lawn-box hedge look that has turned America’s neighborhoods into boring clones of one another. Learn about the many prairie plants that fit into a more modest lot size, that won’t overtake your garden and work well even when used in formal beds. The prairie is not only colorful in the fall; in fact, some of the most beautiful prairie wildflowers bloom in spring and summer.

We live where prairie once existed so it makes sense that we garden using prairie wildflowers. After all, these plants existed for centuries without the benefit of landscape crews and garden centers. A prairie landscape is also friendlier on the environment, requiring none of the water that our thirsty lawns need and the use of chemicals to control pests is virtually eliminated.

It’s also important to realize that we can garden using native wildflowers but few of us have the rich, deep fertile prairie soils that once existed on the plains. Today many of us are left with urban soils, heavy clay gumbo is all that remains once the topsoil is stripped away. This soil is usually replaced by the subsoil that was dug out for a basement and spread out over the lot and compacted by equipment. For any plant to be successful we need to amend our soils to try and replicate the soils we once had. This is accomplished by simply raising the existing soil grade with a generous amount of topsoil and compost into the soil base.

Preparing a Planting Bed

Weeds are best eradicated before planting or sowing, because they outcompete slow growing prairie seedlings and shade them too.

Smothering is a popular technique for small areas of bluegrass, fesque, and weeds. First cut the grass or weeds very short then lay down a layer of black plastic for up to a month to smother and cook them. Some gardeners lay down layers of newspaper (at least 10 sheets) over aggressive weeds, and then spread 4-6 inches of a sand/compost mix on top of the paper. Plant plugs and seeds directly into this mixture.

You can also use the least toxic, shortest-lived herbicides, as sparingly as possible, as carefully as possible, and only on those perennial weeds that are unfazed by hand-weeding.
If possible enrich the soil for your tall grass prairie garden by incorporating 3-6 inches of compost/topsoil and your dry, short grass prairie garden will benefit from raising the soil with a topsoil/sand/gravelly mix.

Maintaining Prairie Gardens

It is best to fight only those weeds that can cause tremendous trouble later. It is helpful to know what the prairie plants look like when they first emerge in spring, but it is far easier to memorize the life cycle of a dozen invasive weeds.

Let annual weeds act as a cover crop and worry only about keeping seed from maturing by mowing. Mow whenever weeds get over 10 inches tall using a flail mower or a weed whip. If weeds are minimal, hand-weed only.

The best way to handle insects is to do nothing at all and let nature take its course. 1% of garden insects are pests.

Do not water your garden after it is established otherwise the plants that survive will be those that require extra water and the ones that can live on simply rainfall rotted because they got too wet. Grasses are best not fertilized and not placed where the sprinkler system will hit them. Don't kill prairie plants with kindness; remember most of these plants evolved on poor soils and fluctuating moisture levels.

There are many ways to incorporate prairie plants into your existing perennial border or perhaps you want to create your own "postage stamp" prairie garden. You can use the following planting plan to help you achieve the right texture and density of wildflowers and grasses. First divide your garden space into a grid of one square yard sections and plant one dominant grass per square yard. There are 1-4 species of dominant grasses for each kind of prairie. It is best to plant them in a random pattern so that when that species is most eye-catching, nothing will look lined up and artificial. For every dominant grass, plant one subsidiary grass. For every ten dominant grasses, plant a shrubby prairie flower. Now, choose at least four different species of cool season forbs and at least four species of warm season forbs for each dominant grass and place them in drifts. Lastly, broadcast seeds of pioneer forbs to help cut down on weeds. As soon as the rhizomatous pants start to spread and everything seeds out, this grid should disappear altogether.

**Dominant Tall Grasses**
- Indiangrass: *Sorghastrum nutans*
- Big Bluestem: *Andropogon gerardii*
- Switchgrass: *Panicum virgatum*

**Dominant Short Grasses**
- Little Bluestem: *Schizachyrium scoparium*
- Sideoats Grama: *Bouteloua curtipendula*
- Blue Grama: *Bouteloua gracilis*
- Prairie Dropseed: *Sporobolus heterolepis*

**Subsidiary Grasses**
- Sideoats Grama: *Bouteloua curtipendula*
- Little Bluestem: *Schizachyrium scoparium*
- Canada Wildrye: *Elymus canadensis*
Prairie Junegrass- *Koeleria pyramidata*
Prairie sedge- *Carex bicknelli*

**Shrubby Wildflowers**
Leadplant- *Amorpha canescens*
New Jersey Tea- *Ceanothus Americana*

**Tall Cool Season Wildflowers**
Rattlesnake Master- *Eryngium yuccifolium*
White Wild Indigo- *Baptisia lactea*
Ohio Spiderwort- *Tradescantia ohiensis*
Tube Penstemon- *Penstemon tubaeftorus*
Mountain Mint- *Pycnanthemum virginianum*

**Tall Warm Season Wildflowers**
Wild Bergamot- *Monarda fistulosa*
Pitcher's Sage- *Salvia azurea*
Obedience Plant- *Physostegia virginiana*
Pale Purple Coneflower- *Echinacea pallida*
Prairie Coneflower- *Ratibida pinnata*
Compass Plant- *Silphium laciniatum*
Joe-Pye Plant- *Eupatorium purpureum*
Thickspike Gayfeather- *Liatris pycnostachya*
Showy Goldenrod- *Solidago speciosa*
Sky Blue Aster- *Aster azurea*

**Short Cool Season Wildflowers**
Purple Poppy Mallow- *Callirhoe involucrata*
Missouri Primrose- *Oenothera macrocarpa*
Candle Anemone- *Anemone cylindrica*
Prairie Smoke- *Geum triflorum*
Prairie Phlox- *Phlox pilosa*
Pasque Flower- *Pulsatilla patens*

**Short Warm Season Wildflowers**
Wild Petunia- *Ruellia humilis*
Prairie Onion- *Allium stellatum*
Purple Prairie Clover- *Dalea purpurea*
Butterfly Milkweed- *Asclepias tuberosa*
Black Sampson- *Echinacea angustifolia*
Plains Coreopsis- *Coreopsis palmata*
Dotted Gayfeather- *Liatris punctata*
Missouri Black-Eyed Susan- *Rudbeckia missouriensis*
Aromatic Aster- *Aster oblongifolius*

**Pioneer Forbs**
Daisy Fleabane- *Erigeron strigosus*
Black-eyed Susan- *Rudbeckia hirta*
Upright Prairie Coneflower- *Ratibida columnifera*
Shell-leaf Penstemon- *Penstemon grandiflorus*
Prairie Ragwort- *Senecio plattensis*
Native Woodland Flowers
Christina Hoyt, Nebraska Statewide Arboretum

Growing up in Minnesota I learned to love three things: trees, water, and woodland wildflowers. I looked forward to the spring when the flowers would peak through the soil, burst into flower, and then quickly fade. It was always a challenge to see if I could catch things in bloom: Trillium, Marsh Marigolds, Jack-in the pulpit, Lady Slippers and Solomon’s seal. While most of the woodland flowers I encountered don’t find home in Nebraska, some are native to the upland forest region of Eastern Nebraska. Although most Nebraskans don’t live in the woods, many people have the perfect micro-climates for these wildflowers in their own backyards. In the places where "nothing grows" because it’s too shady, these woodland plants take center stage.

Moist Shade

**Bloodroot** (*Sanquinaria canadensis*) is in the poppy family and gets white flowers in mid-spring. The leaves persist throughout the growing season.

**Blue Flag iris** (*Iris virginica*) grows 20” tall with dark blue flowers. Prefers moist conditions.

**Dutchman’s breeches** (*Dicentra cucullaria*) grows 12” tall and has V-shaped flowers and fern-like foliage. It’s an ephemeral plant, leaves fade as trees leaf out.

**Jack-in-the pulpit** (*Arisaema triphyllum*) grows 2’ tall and has deep purple-green leaves with a flower hidden under a hooded spathe. Does best in moist, humus-rich environments.

Dry Shade

**Solomon’s seal** (*Polygonatum biflorum*) is the GreatPlants perennial of the year. Grows 2’ tall and has grace full arching branches. In the spring it has dainty white flowers that dangle from the stem. Try Variegated Solomon’s Seal and allow it to colonize.

**Wild columbine** (*Aquilegia canadensis*) grows 18” tall. Gets salmon color flowers April-June. It will spread and colonize.

**Wild cranesbill** (*Geranium maculatum*) grows 12” tall. Gets five-petaled pink flowers. Tolerates disturbed areas and prefers partial-shade. It will colonize.
Lucky to Have Ohio Buckeye
Sue Kohles, Nebraska Statewide Arboretum

The notoriety of the Ohio buckeye is more likely to be associated with a collegiate athletic team than a landscape tree. It is its physical characteristics that distinguish it as a college mascot and the state tree of Ohio, but more importantly, as a great addition to the ornamental landscape.

Ohio buckeye, or Aesculus glabra, is native to the east and central United States, including southeast Nebraska. Its common name is derived from its beautiful 2 inch mahogany-colored seed that resemble a deer’s eye and are produced in late summer and beloved by squirrels. Native Americans carried these smooth, shiny seeds to help prevent arthritis, and they were thought to be a good luck charm.

We would be fortunate indeed to have more Ohio buckeye in the landscape to contribute to its diversity and aesthetics. Large, bulging terminal buds in late winter precede showy, erect yellow-green flower panicles that adorn the tree in early spring before the tropical-looking dark green palmate leaves make their early appearance. The trade-off for early leafing in the spring is the early fall leaf drop of yellow-orange to russet leaves.

Ohio buckeye typically has a short trunk and low branching symmetrical structure that adds solid form to the winter landscape. It is hardy in Zones 4-7, does best when grown in moist, well-drained soil and is tolerant of variable pH. It can be subject to leaf scorch (browning of leaf margins) during unfavorable hot, dry environmental conditions. Best when planted in part sun/part shade, buckeye has a medium growth rate to a height of 20-50 feet. Ohio buckeye is an excellent tree for naturalized plantings, and its thick, rounded canopy provides dense shade. Due to its large seed and capsule (husk) it is usually not recommended as a street tree in many cities, but its contribution to the diversity and aesthetics of the landscape should not be overlooked.

Two other noteworthy species of buckeye are yellow buckeye (Aesculus flava) and bottlebrush buckeye (Aesculus parviflora). Yellow buckeye is similar to Ohio buckeye but appears to be less susceptible to leaf scorch. Bottlebrush buckeye is a lovely 8-12’, Zone 4-8 shrub with showy summer flowers. It requires more protection and shade than Ohio or yellow buckeye.

NOTE: Buckeye seedlings will be distributed to Lincoln-area third graders late in April by the Lower Platte South Natural Resources District. The trees were started and grown by the Nebraska Statewide Arboretum. For more on planting and care, go to arboretum.unl.edu, "Trees for Third Graders."

**Ohio buckeye was selected as the 2007 GreatPlants Tree of the Year.**
Restless about Natives: Why the Debate?
Jim Locklear, Nebraska Statewide Arboretum

It’s hard to imagine that there could be controversy surrounding something like gardening, but an ongoing, heated debate over the issue of using native vs. non-native plants occasionally rears its head, even in Nebraska.

Dr. Michael Dirr, noted authority on woody landscape plants, has written of his fellow horticulturists, "Friendships are solidified and shattered over native plants." The battle lines are usually drawn by folks who, for a number of different reasons, feel that native plants are the best choice for use in our cultivated landscapes. Most native plant enthusiasts are content to simply inspire wider use of natives; others, however, are more adamant and take a more activist approach.

While these things will continue to be debated in the pages of horticultural and environmental publications, the average person just wants to know what's the best plant for their landscape.

A native plant is one that occurs or occurred naturally in a particular region. Sometimes this definition is tightened up by tacking on the phrase, "before European settlement." The key, however, is how you define the region.

The boundaries of the region in question are most often man-made, such as a political unit. However, the fact that a plant is native to a particular state, like Nebraska, is not necessarily an indication of how well it will perform as a landscape plant across the state.

Limber pine, for example, occurs in Nebraska, but only in one small population west of Kimball near the Wyoming line. White oak just makes it into Nebraska in the
southeast corner of the state. While both are natives, they have extremely limited distributions at opposite ends of Nebraska, and do not always perform as well outside of their ranges.

Some plants may be widespread, and quite hardy, but are not appealing as landscape plants. An example is box elder, a smaller tree that occurs across Nebraska but which lacks much ornamental value and therefore is not often grown as a landscape plant (one horticultural writer labeled it an "alley cat" tree).

The great advantage of natives is that they are well adapted to local growing conditions and should, therefore, require less water, fertilizer, pesticides, etc. to grow and maintain. There is also less chance of natives becoming invasive weeds, since their natural competitors are present locally.

A less practical, but equally valid reason for the use of natives is that they reflect a sense of the natural landscape of the region, a sense of place. Many people are tired of landscapes that look like every other place in the country. Using natives allows them to bring a regional character to their surroundings.

No plant, native or non-native, is without its limitations. Bur oak is a magnificent tree, but relatively slow growing. Green ash is very hardy, but suffers from borer insects. Sycamores have beautiful bark, but may grow too large for most urban landscapes.

The most important issue in selecting plants (assuming they are non-invasive) is not whether they are native, but whether they are well adapted to the growing conditions they will face in the landscape. Few people would observe bald cypress in its natural setting in a southern swamp and imagine it would grow in Nebraska. Yet this non-native has proven to be a hardy, adaptable tree in Nebraska that can tolerate both wet and dry conditions.
Winter has finally arrived in full force, sending most of us inside. This is a good time of year to sit by the window and survey the landscape, especially with planting season just around the corner. Does your landscape look drab? Winter landscapes are challenging because of the absence of green foliage and the bright hues of the growing season. During these months texture and form take on a vital role in enjoying the landscape. There are a variety of trees, shrubs and perennials that can add texture and form in the winter.

Trees get to showcase their bark and fruit during the winter months. A few interesting ones to think about include Paperbark Maple (Acer griseum) with its cinnamon colored exfoliating bark, Yellowwood (Cladrastis lutea) has beautiful, smooth gray branches and glistening trunk; the multicolored bark of Lacebark Pine (Pinus bungeana) and Hawthorn (Crataegus spp.) with its bright orange berries that hold far into the winter season.

Shrubs can also give winter interest. Red twig and Yellow twig dogwoods (Cornus sericea) give medium texture and bold color. Hydrangeas (Hydrangea quercifolia) can add textural interest when the flower bracts are left on for the winter. Sumac (Rhus typhina) looks architectural during the winter months, turning into a living sculpture. Witchhazel (Hamamelis x intermedia), which often blooms in late winter, gives a nice surprise to the passerby. Finally, the Holly (Ilex x meserveae) with its glossy green foliage and red berries seems to defy even the worst of winter weather.
Less Common Conifers
Justin Evertson, Nebraska Statewide Arboretum

As the holiday season approaches, perhaps it is time to think about evergreen trees beyond their use as yuletide ornament. Throughout much of the Great Plains, just a handful of species make up the majority of evergreens planted. This lack of diversity is starting to be a real problem in areas where diseases are decimating both Scotch pine and Austrian pine, the two most commonly planted pine trees of the last 50 years. Fortunately, there are several less-common types of evergreens suitable for planting within the region. A few to consider include:

**Concolor Fir** (*Abies concolor*): Graceful, soft, silvery-blue foliage makes it a nice alternative to Colorado spruce. Grows to 70'tall by 40'wide.

**Douglasfir** (*Pseudotsuga menziesii*): Soft blue-green needles with attractive cones. Grows to 70't x 30'w.

**Bosnian Pine** (*Pinus heldreichii*): A graceful, dark green, more compact tree that is a nice substitute for Austrian pine or Scotch pine. Grows to 50't x 30'w.

**Limber Pine** (*Pinus flexilis*): Native to western Great Plains where it makes a good, drought-tolerant, long-lived landscape tree on well-drained soils. 60't x 40'.

**Bristlecone Pine** (*Pinus aristata*): A small, slow growing, picturesque tree with bottlebrush like tufts of needles at branch tips. Best on well-drained soils of western Nebraska. Grows to 30't x 20'w.

**Serbian Spruce** (*Picea omorika*): Similar to Norway spruce with graceful, drooping branch tips and attractively streaked silver-green foliage. Grows to 60't x 30'w.

**Pinyon Pine** (*Pinus cembroides*): A slow growing, extremely drought-tolerant tree. Best suited to well-drained soils of western Nebraska where it will grow up to 25't x 15'w.

When planting evergreens, remember that most species prefer well-drained soils. In fact most evergreens will struggle in heavily irrigated, turf-dominated yards. In addition, evergreens almost always work better in groups, as backdrops or as framing elements. Be careful if planting in the front yard especially near sidewalks, intersections or picture windows where they might eventually outgrow the space.
Conifers Drop Their Leaves, Too

Justin Evertson, Nebraska Statewide Arboretum

Although most conifer trees are considered to be evergreens, they all eventually drop their needles. What makes them evergreen is that their leaves persist more than one year before falling. Since new needles are added every year, there is always an overlap between green needles and those that are due to fall.

Most pine trees retain their needles for three to four years before dropping. Depending on the species however, the period of retention can range anywhere from two years for some faster growing types to more than fifteen years for some slower growers like bristlecone pine. In the Midwest, the evergreen with the most prominent needle drop is white pine. Every fall these trees appear sprinkled with yellow, desiccating needles. People that experience this for the first time, often assume these trees are sick or dying.

Needle drop is least evident on junipers, spruce and fir trees. On these species, the needles typically persist until they are shaded out by branch growth. Since these needles don't dramatically change color when they drop, the act of shedding usually goes unnoticed. However, walking under a mature spruce tree barefoot would painfully reveal the truth about needle drop.

Believe it or not, there are actually a few types of conifers that shed all their needles every year. These deciduous conifers include larch, bald cypress and dawn redwood. The larch with its golden yellow and the bald cypress and dawn redwood with their bronze hues can add great beauty to the fall landscape. Such trees are unusual enough that more than one story has been told about people that removed such trees after they were mistakenly determined to be dead.

Yikes!
Although autumn can be a somewhat somber time with the thought of winter’s fast approach, the season is also a magical time in the landscape. To most people, the autumn landscape evokes images of brilliant leaf colors. What is often forgotten are the many flowering plants that wait for cooler days to put on their show. Some of the best include:

**Asters (Aster spp.):** There is a wide size and flower-color range to these plants that seem to wait until the very end of the growing season to put on their show. Many types have the ability to withstand frost and keep blooming until a hard freeze.

**Goldenrods (Solidago spp.):** Although some goldenrods bloom during the summer, some species are most striking in October. Showy goldenrod (Solidago speciosa) and a new cultivar called ‘Fireworks’ (Solidago rugosa) are two of the best.

**Helen’s Flower (Helenium):** Helen’s flower seems to appear out of nowhere in September and October. The gaillardia-like (daisy) flowers, ranging from yellow to orange-red, glow on the tops of 3 to 5’ tall plants.

**Boltonia** is a tall (up to 5’) native perennial that resembles a white-flower aster. Its arching and open habit makes it a great choice for the back of the border. Boltonia prefers a moist site but will do well in drier soils when established.

Other fall bloomers to watch for include blue Pitcher sage (Salvia azurea), Sedum species (salmon red), Monkshood (Aconitum—white and blue), Chrysanthemum (Dendranthema—variety of colors), and Gaura (white and pink). Visit your local nursery or landscape center for more ideas.
To our pleasure and sometimes to our chagrin, nature allows for plants to multiply. Nature also allows for plants to change. It allows for the introduction of variation due to genetic and environmental factors. This natural variation was at work near the town of Taylor Nebraska where a unique variation of the Eastern redcedar was discovered in 1978. This Taylor-made version of the Eastern redcedar was a narrow upright tree, 25' tall and 3' wide and much more refined than the broadly pyramidal and irregular shape of its species. It surely must have dressed up the grasslands of central Nebraska with its formal columnar shape, more likened to a French garden than a prairie.

The qualities of Juniperus virginiana 'Taylor' do not stop with its growth habit. It has been found to be disease resistant and tolerant of a wide variety of soil and environmental conditions. These attributes make it tailor-made for success and give it great value as a landscape plant. In the design of the landscape it can be used as a sentinel to a doorway or as an effective and orderly screen or border. It can add a vertical element to the horizontal façade of a building. Taylor is comfortable in tough urban sites such as narrow planting beds next to brick walls and concrete. Plant it with a mass of native grass at its feet and these grassland companions take on the appeal of the country, providing a lovely winter display and cozy cover for wildlife.

Variation in the plant community often leads to hardy plants and a diverse and sustainable landscape. It led to the uniquely Nebraska, Taylor juniper. The use of Taylor in the ornamental landscape celebrates the variety to be found in the plant communities of the Great Plains.

The Nebraska Statewide Arboretum (NSA) introduced the Taylor juniper to the ornamental plant industry as part of its plant introduction program in 1992. Like the Taylor juniper, NSA is also unique and "made in Nebraska." In 2004 NSA celebrates the 25th Anniversary of its mission of "...enriching lives through the beauty and wonder of plants."

Retail Nursery Sources for Taylor Juniper:  
Wilke Landscape Center in Columbus, NE (402/564-1345)
Indian Creek Nursery in Omaha, NE (402/558-5900)
Cross Nursery in Lakeville, MN (888/217-0826)
Monrovia, www.monrovia.com

Wholesale Sources
Bailey Nursery, www.baileynursery.com
Greenleaf Nursery, www.greenleafnursery.com
Monrovia, www.monrovia.com
Anyone living on the Plains knows first-hand the comfort provided by a shade tree on a hot summer day. Just try to imagine camping or picnicking with no trees around to provide shade. Yikes! Incredibly, it has been calculated that a large shade tree has as much cooling potential as ten large air conditioners. Although every tree provides at least some shade, the type and quality of the shade can be quite different among species:

**Bur Oak:** Perhaps the most majestic of the native trees, bur oak can grow to be over 50 feet tall and more than 70 feet wide. Just one or two of these long-lived trees could easily provide all the shade necessary for a big backyard.

**Honeylocust:** Compound leaves with tiny leaflets provide a filtered or “dappled” shade making it easier to grow other landscape plants under this tree.

**Linden:** Drooping branches, an upright pyramidal form, and heavy shade from tightly packed leaves makes this a better choice for the background than where activity is planned. Linden is a favorite host of the cicadas and thus a major source of the summer “buzzing” sound.

**Elm/Hackberry:** The architecture of these related species is upright when young and arching with age, making them ideal for shade along streets and where activities are planned.

**Sugar Maple:** A classic rounded form with fairly dense shade. This is one of the more beautiful shade trees when mature.

**Green Ash/White Ash:** The ash species are typically oval when young and broadly vase-shaped with maturity. Although not as graceful as other species, they do make a good choice along streets and where activities may be desired underneath them.

**Cottonwood:** Who hasn’t enjoyed the shade of a cottonwood on a hot summer day? The soft rustling of the leaves is also an attractive feature of this native tree.
Blues and Yellows
Justin Evertson, Nebraska Statewide Arboretum

A simple but very effective color combination for the flower garden is blue with yellow. Mother Nature must have understood this from the start as she dispenses both colors in great quantities. In fact, it is relatively easy to keep the color combination going throughout the growing season as different plant species succeed each other in flower prominence. From spring through fall, here are just a few of the great combinations possible:

**Catmint** (*Nepeta* spp.) and **Cushion spurge** (*Euphorbia polychroma*): These two plants grow from 10" to 18" tall and are most striking in early to mid-spring.

**May Night Salvia** (*Salvia nemorosa*) and **Moonshine Yarrow** (*Achillea x 'Moonshine'?): Both plants are extremely reliable, easy to grow, reach about 18" tall and are at their peak in late May to early June.

**Blue False Indigo** (*Baptisia australis*) and **False Sunflower** (*Heliopsis helianthoides*): These two prairie natives grow from 24" to 36" tall and are going strong in late spring and early summer. Give each plenty of room to grow.

**Russian Sage** (*Perovskia atriplicifolia*) and **Goldsturm Rudbeckia** (*Rudbeckia fulgida 'Goldsturm'?): The soft spray-like blue of Russian sage (36" to 48" tall) makes a great backdrop to the summer-long blooms of **Rudbeckia** (18" to 24" tall).

**Sunny Border Blue Veronica** (*Veronica x 'Sunny Border Blue'?) and **Fernleaf Coreopsis** (*Coreopsis verticillata*): Both plants stay under 24" tall and are typically mid to late summer bloomers.

**Pitcher sage** (*Salvia azurea*) and **Goldenrod** (*Solidago* spp.). Mainstays of the late summer and fall landscape, these native plants can both grow 48" tall, depending on the type selected. However, both can be cut back frequently during the growing season to keep low and to delay blooming.
Evening-the time of day when the setting sun and dusky sky bring a softening to the bustle and turmoil of life. A time to head home and wind down.

But while some of us are calling it a day, others are just clocking in. Such creatures are termed vespertine, "of the evening." Among them are the evening primroses, a group of plants with flowers that open in the late afternoon and evening, and fade away at the coming of dawn.

Probably the best known of the group is Missouri evening primrose (Oenothera macrocarpa), a plant that has been in horticulture since 1813, and is one of the most popular herbaceous perennials in America today. Its bright yellow, four-inch-wide flowers are dramatic and unmistakable, and inspire superlatives like "astounding" and "glorious."

Missouri evening primrose was first collected south of St. Louis by the great botanical explorer, Thomas Nuttall. He named his discovery *Oenothera macrocarpa*, the latter part of the name meaning "large fruit," a reference to the sizeable seed capsules of this plant. Often listed in references and catalogs as *Oenothera missouriensis*, Nuttall’s name is now given preference.

Missouri evening primrose is a familiar wildflower in the Ozarks of Missouri, growing in rocky open areas in the woodlands called glades, which explains common names like "glade lily" and "Ozark sundrop." But this beautiful plant also grows in the rocky uplands of tallgrass prairies, and is native to southeastern Nebraska, where it blooms in May and June.
A sprawling plant that seldom exceeds ten inches in height, Missouri evening primrose is often used at the front of a flower border, or is allowed to trail over the slope of a raised bed or cascade over a rock wall. Famed English plantsman Graham Stuart Thomas called this species a "first-order front line plant." A single plant can cover a large area, so Missouri evening primrose must be used judiciously in a rock garden with more diminutive species.

The native habitat of Missouri evening primrose is sunny, dry and rocky, so in the garden it should be planted in full sun and in soil that is well-drained. The ease with which this species is cultivated makes it a great plant for beginning gardeners.

Three close relatives of Missouri evening primrose, all of which have attractive silvery leaves, are native to more western parts of the Great Plains. A selection of one, called 'Comanche Campfire,' was recently introduced into horticulture by the GreatPlants® Program of NSA, and is getting noticed for its beauty and its drought tolerance.

One of the fringe benefits of evening primroses in the garden is that their flowers attract hawkmoths, large insects that bear striking resemblance to hummingbirds.

Although the flowers of Missouri evening primrose last only from dusk to dawn (longer if the morning is cloudy), they are produced in abundance and a new crop is ready each evening.

If you're looking for a beautiful native wildflower that flourishes in heat and dryness, consider the Missouri evening primrose. Its huge yellow flowers will delight you, and will soften even the roughest of days.
The reasons for planting them are as varied as the plants themselves: Koreanspice viburnum for the strong clovelike scent of its flowers; Mohawk viburnum for abundant red buds opening to white blossoms; blackhaw viburnum for glossy red fall foliage; doublefile viburnum for the strong horizontal tiering of its branches-noticeable year-round but most evident midwinter; allegheny viburnum for large, leathery leaves that may persist through the entire winter.

Most of them do well in shade or sun. They require very little maintenance, aren’t particular about their surroundings, are susceptible to few pests, are rarely bothered by deer, attract birds and butterflies, and all of them will offer several seasons of interest, regardless of the reason or season they were planted for.

**American cranberrybush** *Viburnum trilobum* 8-12’ 8-12’, Persistent fruit

**Arrowwood viburnum** *Viburnum dentatum* 6-15’ 6-15’, Can take heavy shade and withstand heat.

**Blackhaw viburnum** *Viburnum prunifolium* 12-15’ 8-12’

**Burkwood viburnum** *Viburnum x burkwoodii* 8-10’ 6-8’

**Doublefile viburnum** *Viburnum plicatum* 8-10’ 9-12’

**European cranberrybush** *Viburnum opulus* 8-12’ 8-12’, Can withstand wet soils. var. ‘Compactum’ 4-6’ 4-6’ var. ‘Nanum’ 2’ 2-3’

**Fragrant viburnum** *Viburnum x carlcephalum* 6-10’ 6-10’

**Judd viburnum** *Viburnum x juddii* 6-
Koreanspice viburnum *Viburnum carlesii 5' 5'

Lantanaphyllum viburnum *Viburnum x rhytidophylloides 10-15' 10-15'

Linden viburnum *Viburnum dilatatum 9' 9', Persistent fruit

Mapleleaf viburnum *Viburnum acerifolium 4-6' 3-4', Can take heavy shade and dry soil

Mohawk viburnum *V. x burkwoodii 8' 8'

Mohican viburnum V. lantana 10' 15'

Nannyberry *Viburnum lentago 15-20' 6-10', Can take dry soils

Sargent viburnum Viburnum sargentii 12-15' 12-15'

Service viburnum *Viburnum utile 6'

Siebold viburnum Viburnum sieboldii 15-20' 10-15'

Wayfaringtree Viburnum lantana 10-15' 15'

* Asterisk denotes fragrant

Michael Dirr says "A garden without a viburnum is akin to life without music and art." No matter why you plant them, viburnums will surprise you by offering something you hadn't expected.
Oftentimes you can determine a plant’s more endearing and obvious attributes by its common name. This is certainly the case for *Cephalanthus occidentalis*, commonly called buttonbush or globeflower. This medium-to-large shrub wears its name well. In July and August the buttonbush is all buttoned-up with unique globe- or button-shaped cream-colored flowers. Also commonly known as honey balls, we should not be surprised that its fragrant flowers provide nectar for bees. In the fall it produces clusters of dry fruit called nutlets that contain many seeds. Worn against a coat of glossy green leaves these balls of seed turn from yellow-green to reddish brown providing a plant all dressed up for fall. Not to be taken for only its well-dressed appearance, the seeds of buttonbush provide food for birds, especially aquatic birds.

Buttonbush is native to Nebraska and other parts of North America. Ethnobotanical history indicates that Native Americans used the root and bark as medicine for ailments ranging from eye maladies to dysentery. In nature, buttonbush can be found growing in woodlands and in moist areas next to waterways and prairie marshes. In spite of this natural upbringing, the buttonbush adapts to other locations, including dry sites, with the toughness inherent to many in the native plant community. It is tolerant of sun and part shade and typically grows 5-6 feet tall, but can reach 20 feet. The multi-stemmed mature wood is light gray to brown and scaly. Newer stems are rusty brown and decorated with white lenticels (pores). Its winter interest is further enhanced by stem tips gracefully bowed by seed nutlets, creating a rounded form in continuity with its common name. In addition to the cream-flowered native, a pink-flowered selection called ‘Sputnik’ is limitedly available.

Buttonbush is most often used in naturalized plantings, but its named attributes tell us it should be used more often and in a variety of landscapes. Clothing the ornamental landscape with a well-rounded selection of plants will provide the local and global landscape with well-worn sustainability. Try the buttonbush out for size; it will surely fit into your garden like a well-made suit fits into your wardrobe.
Spring has finally arrived, at least according to the calendar. Spring in Nebraska is anything but predictable. A strong cold front, sometimes with rain or even snow, usually follows a week of warm, sunny weather. Perennial flowers quickly spring to life, fooled into thinking summer is right around the corner. Midwestern gardeners know it takes a hardy plant to survive our climate and still provide spring beauty. Fortunately, we have the old reliable daffodil, iris and peony to remind us what time of year it is. But there is another group of plants that have been the harbinger of spring for centuries here on the windswept prairies, savannas and hardwood forests of Nebraska and the Great Plains-spring wildflowers. Many are discovering the beauty these native jewels bring to the perennial border and shade garden. They are a tough, reliable group of plants that are sometimes overlooked, but will more than satisfy your demand for spring color.

There are a number of native woodland wildflowers that combine well with your existing shade lovers like hosta and astilbe. Most of these jewels decorate the woodlands of extreme eastern Nebraska,
along the Missouri river bluffs. In early spring little merrybells (Uvularia sessifolia) sends its delicate arching stems up through the forest floor. Dainty 1” yellow bells hang in loose clusters atop 10” stems. The attractive, rich green leaves and arching stems look similar in appearance to Solomon’s Seal (Polygonatum spp.), another woodland beauty for the garden. Wild columbine (Aquilegia canadensis) is a fine native woodland wildflower and one of the first, tall-growing columbines to flower. Their beautiful flowers, composed of yellow sepals and red spurs, are old-fashioned favorites in the garden. The large wavy-lobed leaves and waxy white flowers of bloodroot, the distinct umbrella-like leaves of mayapple (Podophyllum peltatum) and the bluish-green, fern-like foliage of Dutchman’s breeches (Dicentra cucullaria)form a lush green tapestry on the forest floor. To grow any of these woodland beauties simply provide a rich, organic soil and consistent moisture for best growth.

Spring wildflowers are not just confined to the shady woodland understory, indeed there is an impressive array of sun-loving spring wildflowers. Pasque flower (Pulsatilla patens) is a real harbinger of spring with its lavender, cup-shaped flowers blooming in April. Attractive silky seed heads and fuzzy foliage remain attractive all season long on this drought-tolerant perennial. Prairie smoke (Geum triflorum) is a little jewel covering northern shortgrass prairies with pink “smoke” in early summer after blooming in late spring. Prairie smoke has nodding, deep pink flowers in spring that turn into pale pink plumes, giving the plant the appearance of being covered with a blanket of pink smoke. This long-lived, high-quality perennial has silky leaves, mostly in a rosette up to 12” high.

The ground plum (Astragalus crassicarpus) blooms with clusters of slender pea-like flowers in early spring, then forms little pods that look like small plums sprawling on the ground. Pussytoes (Antennaria spp.) are charming groundcover plants, forming an attractive silver-white carpet. Clusters of tiny white fuzzy flowers that are reminiscent of a cat’s toes rise above the leaves in spring. The pale green leaves of prairie blue-eyed grass (Sisyrinchium campestre) make this plant look like a miniature iris. The leaves emerge from the soil in early spring to form grass-like tufts up to 12” tall. Bright blue 1/2” star-shaped flowers emerge in clusters atop flattened, leafless stalks in May.
Anyone who thinks trees lose their interest when the weather turns cool and the leaves fall off is barking up the wrong tree (pardon the pun). Winter is actually a great time to appreciate most trees for the interesting bark that has been revealed with the loss of the leaf canopy. This winter, take some time to head outdoors for a closer look at our sylvan friends. The interest and beauty revealed may surprise you. As you make your way, see if you can pick out some of the following species.

**Birch**: Several types of birch trees have exfoliating bark. The paper birch, which is native along the Niobrara River, has a chalky-white bark that peels into thin paper-like layers. The river birch, which is common in eastern Nebraska, has an orange to cinnamon brown bark that peels freely when young.

**Coffeetree**: Few deciduous trees match the leafless beauty of coffeetree. It’s coarse outline and stucco-like bark make it an eye catcher in the winter landscape.

**Hackberry**: The corky ridges and wart-like projections on the trunk and bigger branches of hackberry make it an easy tree to identify.

**Persimmon**: Persimmon has a thick, dark (almost black) bark deeply divided into very distinctive small blocks.

**Quaking Aspen**: The smooth greenish-white to cream-colored bark of quaking aspen is a real treat in the western Nebraska landscape. The bark is especially attractive against an evergreen backdrop or dark-colored home.

**Shagbark Hickory**: Like its name implies, the bark of this hickory exfoliates in long, shaggy strips. There is no mistaking this tree in Nebraska’s eastern hardwood forest.

**Sycamore and London Planetree**: These two trees are very closely related and both have smooth bark that exfoliates to expose gray, brown and creamy white layers in a mottled patchwork pattern.

**Yellowwood**: The gray bark on mature trees is very smooth and gray.

**Ponderosa Pine**: The bark on older trunks is a great mixture of buff, brown, and cinnamon-red scaly plates divided by deep, nearly black fissures.

**Lacebark Pine**: As its name implies the bark on this tree exfoliates (much like sycamore) in a smooth patchwork of lighter and darker shades of gray and gray-brown.

**Redcedar and Rocky Mountain Juniper**: On older trunks of both trees, the bark is a handsome reddish brown that peels away in long strips.
Ornamental grasses are key plants in the natural landscape providing seasonal beauty with colors and textures only they can provide. Many gardeners are discovering the many benefits ornamental grasses bring to the garden while creating a more diverse and adaptable landscape for the Great Plains.

Ornamental grasses are adapted to the extremes of the midwestern climate making them an obvious choice for a low maintenance landscape. Perhaps no other group of plants can offer such a huge array of textures, forms, sizes, colors, flowering times, and cultural adaptations than grasses. From the tiny 6-inch dwarf blue fesque to the towering giant reed grass growing to 18 feet in one season, there is seemingly a grass to fit any landscape. Grasses provide movement in the garden, dancing in the slightest summer breeze. As they move, the stems and leaves rustle together to add sound to the garden.

Ornamental grasses come in a variety of soft and subtle colors, from forest green to lime and from gray-green to powder blue to light yellow, all complementing brightly colored perennial flowers. The autumn chill transforms grasses into an array of golds, russets, bronze, and burgundy. The fluffy flowers and seed heads of grasses undergo a number of changes in color and form from month to month, often enhanced by morning fogs and frosts in the fall. The flowers and foliage of grasses are highly translucent and are often at their best when back-lit or side-lit by the sun. The low angle of the sun in autumn and winter can literally make a grass glow.

Most grasses, no matter what size, shape, or color, add a strong vertical element to a garden design. The long linear leaves and fine stems of large grasses provide a soft, fine-textured backdrop and shorter grasses compliment broad-leaf perennials in front. Grasses help frame the flowers and provide support for floppy perennials.

Some of the best ornamental grasses for the landscape are native to the Great Plains. Gardeners are growing knee-high grasses such as sideoats grama, blue grama, junegrass, little bluestem, and prairie dropseed to create more of a short grass prairie. Taller grasses such as big bluestem, Indian grass, and switchgrass were once key components of the tall grass prairie and thankfully are now also becoming key components in today's urban prairies.
Evergreens Are Winter's Tonic
Justin Evertson, Nebraska Statewide Arboretum

It's incredible but true! The unique ability of certain trees to retain green leaves year-round makes life on the Great Plains much more enjoyable. Just imagine how bleak our existence might be without the green hues of pine, spruce, fir and juniper punctuating the otherwise brown and gray landscape of winter (a period that can last more than five months in Nebraska!). Think also about how these trees mercifully block cold winter winds making us much more comfortable and potentially saving us collectively millions of dollars per year in heating costs. Bird lovers will also think about the great cover such trees provide for cardinals, blue jays, juncos, waxwings and countless other species. And of course the holiday season has certainly been made more festive with the sights and smells of decorated trees and other greenery.

Fortunately for us, some of the best evergreens for landscape use grow natively right here in Nebraska. Ponderosa pine, limber pine, Rocky Mountain juniper and eastern redcedar have lived here for eons and have inherited the ability to grow in very tough conditions. Growing slowly but steadily, these trees have survived numerous droughts, fires, deer rubbings and skunk gnawings over their lifetimes. Incredibly, a few grand specimens in the Panhandle have been dated to be over 500 years old! If you take a closer look at our hard-working evergreen trees this winter, keep in mind the following physical distinctions that help identify what type of tree it may be:

**Pine:** Needles are long and rounded and occur in bundles of 2, 3 or 5. Cones have thick, hard scales that curl open when dried.

**Spruce:** Needles are square, stiff, short and occur singly. Cones hang down from the tree on both upper and lower branches, fall to the ground intact and have thin, papery scales.

**Fir:** Needles are flat, soft, short, stalkless and occur singly. The upward pointing cones occur in the upper portion of the tree and disintegrate on the branch.

**Douglas fir:** Needles soft, flat and single. Cones point down, occur throughout the tree, fall from the tree intact, and have unique three-pronged bracts.

**Juniper/Redcedar:** Prickly leaves are both scale and awl shaped. Fruit is blue and berry like.
Native Shrubs Deserve More Attention
Justin Evertson, Nebraska Statewide Arboretum

Native shrubs are the Rodney Dangerfield of the landscape world - they often get little or no respect. Just take a walk through any neighborhood and you will find countless spirea, barberry and juniper but probably not a single mountain mahogany, hazelnut or serviceberry. If I were a native shrub, I would have a real inferiority complex! That's too bad because these plants are not inferior at all. In fact many native shrubs are more reliable and provide better flower, fruit, fall color and growth habit than many of the non-native types that are so common in our landscapes.

One of the best reasons for using native shrubs is that several species produce some of the best fruit for both human and wildlife consumption. This fact was not lost on the Native Americans who made such fruit an important part of their diet. Even today a person could survive a trek across the state by munching on nothing but shrub fruits. Buffaloberry and chokecherry are available in the west, plum and sand cherries in the central and serviceberry and gooseberries in the east. Be creative and incorporate some native fruits into your cooking. Nothing beats serviceberry pie, chokecherry jelly or ice cream covered in hazelnuts and blackberry sauce. Mmmm good!

The next time you think about planting some shrubs, check out your local garden center for some of these great natives:

- **Mountain Mahogany** - native to the Panhandle; grows to 6' tall; extremely drought tolerant.
- **Skunkbush/Fragrant Sumac** - glossy green in summer with striking red fruit and leaves in the fall; grows 3 to 7' tall.
- **American Hazelnut** - a unique shrub with edible nuts and great fall color; grows 4 to 6 feet tall and wide.
- **Sandcherry** - an often-sprawling shrub with very tasty fruit; native to the Sandhills.
- **Serviceberry** - nice early flower, glossy summer leaf, sweet fruit and great fall color - what more could you ask for?
- **Rough-leaf Dogwood** - great in flower and fall color; drought tolerant; grows 5 to 8' tall.
- **Buffaloberry** - another western Nebraska native with good fragrance and edible fruit.
Wahoo for the Wahoo!
Sue Kohles, Nebraska Statewide Arboretum

This exclamation of unrestrained enthusiasm goes out for the eastern wahoo, or *Euonymus atropurpurea*, a deciduous shrub native to the Midwest and Eastern United States, and Canada. Although this shrub's common name "wahoo" is derived from the Otoe Indian language meaning arrow wood (and is the namesake for a Nebraska town), it is no wonder that it also shares the word used to express exhilaration. Its outstanding fall display of pink to scarlet leaves and 4-lobed capsule with fleshy fruit are certainly something to "Wahoo!" about and have led to its other common name, burning bush. Not to be confused with its Asian and more commonly used relative, the winged euonymus, *Euonymus alata*, which is also referred to as "burning bush". As is often the case with native plants, the eastern wahoo adapts to hot droughty conditions that can cause winged euonymus to faint.

Although wahoo is most noticed in the fall it is not just a one-season plant. Its fall display of fruit hangs on into winter when its ashy-gray scaly bark, corky-ridged stems, and branching pattern take notice in the more subtle winter landscape. In summer the wahoo bears medium to lime green leaves and purplish-brown 4-petaled flowers in June and July, followed by green capsules that begin to blush with pink by September. It can grow to 10-12 feet tall and is hardy in Zones 4-9. Most often grouped in naturalized plantings, it has merit as a specimen planting as well with near horizontal branching structure and flat-topped form that develops with age.

In spite of its unrestrained attributes the wahoo is not readily available but can be found at some nurseries. Seek it out and express your enthusiasm for a sustainable landscape containing beautiful yet hardy native plants like the wahoo!
Bur Oak – The King of Nebraska's Hardwood Forests
Justin Evertson, Nebraska Statewide Arboretum

Perhaps no tree better symbolizes the spirit of the Great Plains than the bur oak (*Quercus macrocarpa*). This incredibly tough native is able to grow in places few other trees dare go. Its thick, corky bark has even enabled it to withstand prairie fires, making it one of the few trees prominent in grasslands.

Although no tree is perfect, the bur oak comes awfully close. It is relatively disease free, is extremely drought tolerant (2002 has proven that), is adaptable to a wide range of soil conditions and can be very long lived. As a testament to its longevity, one tree growing in Ponca State Park in northeast Nebraska has been dated to 1644. It was reaching for the sky well before the Mayflower landed at Plymouth Rock!

Bur oak grows naturally in Nebraska from Richardson County in the southeast corner to Dawes County in the Panhandle.

Despite its natural prominence, however, bur oak is seldom planted in Nebraska communities. What a shame! If we had planted just one bur oak to every 10 Siberian elms (*Ulmus pumila*), our community forests would be much more spectacular.

Fortunately, with tree planting, it’s never too late to start. Contact your local nursery today about ordering a bur oak, or if you’re ambitious, gather and plant the acorns this fall.

When planting a bur oak, be sure to give it plenty of room to grow. Trees in Nebraska commonly reach 50 to 70 feet tall with a crown spread from 50 to 80 feet. The state champion in Beatrice is 75 feet tall, has a crown spread of over 100 feet and has a trunk circumference of nearly 15 feet.
The Prairie Comes to Life
Justin Evertson, Nebraska Statewide Arboretum

When farms and towns first began popping up across Nebraska a mere 150 years ago, more than 95 percent of the state was covered in prairie. Over the years, however, we have mostly ignored the prairie palette of plants as we've worked to create landscapes based on a vision brought with us from the Eastern U.S. or Europe. Thankfully, more and more people are beginning to covet the beauty and environmental benefits that native plants provide.

As the summer heats up and the grasses grow tall, many of the most colorful prairie flowers begin showing off. This year, take a look for the following plants in the prairie as well as in your local garden center.

**Gayfeather** (*Liatris* spp.) - The spiked, lavender and purple flowers of gayfeather are seen throughout the state; grows from 18” to 4’ tall depending on type.

**Penstemon** species - The tubular flowers of penstemon are favorites of many flying insects; typically in the 18” to 36” tall range.

**Pale Purple Coneflower** (*Echinacea angustifolia*) - This native cousin of the common garden plant has gracefully unique flowers with long and droopy ray petals; 18” to 30” tall.

**Prairie Coneflower** (*Ratibida columnifera*) - A yellow-hatted flower common to upland prairies throughout the state; 12” to 18” tall.

**Prairie-clover** (*Dalea* spp.) - Feathery plants that produce colorful tufts of white, pink or purple flowers; 18” to 24” tall.

**Goldenrod** (*Solidago* spp.) - Late summer is the time for goldenrods to shine. The flower clusters come in all shapes and sizes but is always yellow.

**Pitcher sage** (*Salvia azurea*) - One of the few natives with late-season blue flowers; 3' to 4' tall.

**Aster** species - Fall is aster time. In fact some asters are able to bloom well after the first frost; wide size range.

Patience is a virtue when working with native perennials. Such plants often spend the first year or two putting down extensive root systems and may show only modest growth above ground. However, once the plant is established, there is no better friend to have in the garden. Beware: when drought inevitably returns or when the temperatures soar and plummet, don’t be surprised if you hear your native plants laughing at many of their introduced cousins that are struggling to survive.