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Nebraska Statewide Arboretum

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Articles

by Bob Henrickson

Nebraska Statewide Arboretum



Dividing Perennials

The three main reasons for dividing perennials are to control the size of the plants, to help rejuvenate them, and to increase their number. Dividing and replanting keeps rapidly spreading perennials under control. Dividing will rejuvenate old plants, keeping them vigorous and blooming freely. Dividing perennials is an easy and inexpensive way to gain additional plants for your garden or to share.

WHEN TO DIVIDE

In general, it is best to divide spring and summer blooming perennials in the fall, and fall bloomers in spring. By dividing the plant when it is not flowering, all the plant's energy can go to root and leaf growth.

Fall division should take place between early September and mid-to late October. Allow at least four to six weeks before the ground freezes for the plants to

become established.

If you divide in the spring, allow enough time for roots to settle in before hot weather. Spring division is ideally done in the early spring as soon as the growing tips of the plant have emerged. Spring divided perennials often bloom a little later than usual.

Never divide perennials on hot, sunny days. Wait until a cloudy day, ideally with several days of light rain in the forecast.

Most perennials should be divided every three to five years. Some perennials such as chrysanthemums and asters may need to be divided every one or two years or they will crowd themselves into non-flowering clumps of leaves and roots. Bleeding hearts and peonies may never need to be divided unless you want to increase your stock.

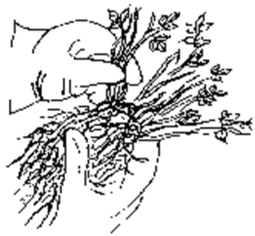
Signs that perennials need dividing are flowers that are smaller than normal, centers of the clumps that are hollow and dead, or when the bottom foliage is sparse and poor. Plants that are growing and blooming well should be left alone unless more plants are wanted.

- **PREPARE TO DIVIDE AHEAD OF TIME** by watering the plants to be divided thoroughly a day or two before you plan to divide them. Prepare the area that you plan to put your new divisions in before you lift the parent plant.
- Prune the stems and foliage to 6 inches from the ground in order to ease division and to cut down on moisture loss.
- **LIFT THE PARENT PLANT** by using a sharp pointed shovel or spading fork to dig down deep on all four sides of the plant, about 4 to 6 inches away from the plant. Pry underneath with your tool and lift the whole clump to be divided. If the plant is very large and heavy, you may need to cut it into several pieces in place with your shovel before lifting it.
- **SEPARATE THE PLANT** by shaking or hosing off loose soil and remove dead leaves and stems. This will help loosen tangled root balls and make it easier to see what you are doing.

Perennials have several different types of root systems. Each of these needs to be treated a bit differently.

SPREADING ROOT SYSTEMS have many slender matted roots that originate from many locations with no distinct pattern.

Plants with spreading root systems include asters, bee balm, lamb's ear, purple cornflowers and many other



common perennials. These can crowd out their own centers. Some can be invasive unless divided frequently. They can usually be pulled apart by hand, or cut apart with shears or knife.



Large, vigorous plants with thickly intertwined roots may need forceful separation with digging forks. Put two forks back to back in the center of the plant and use them to pry the pieces

apart.

Divide the plants into clumps of three to five vigorous shoots each. Small or weak and woody divisions should be discarded. Discard the center clump if it is weaker than the outside edges.

CLUMPING ROOT SYSTEMS originate from a central clump with multiple growing points. Many have thick fleshy roots. This group includes astilbes, hostas, daylilies and many ornamental grasses.



It is often necessary to cut through the thick fleshy crowns (the central growing area between the roots and the leaves and stems of the plant) with a heavy, sharp knife. You can also pry apart these roots with back to back digging forks.

Keep at least one developing eye or bud with each division. If larger plants are wanted, keep several eyes.

RHIZOME DIVISION

Rhizomes are stems that grow horizontally at or above the soil level.



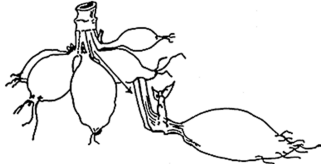
Bearded irises are the most common perennial with this type of root system. Divide irises any time between a month after flowering until early fall.

Cut and discard the rhizome sections that are one year or older. Also, inspect rhizomes for disease and insect damage. Damaged rhizomes should be trimmed and treated, or discarded if too badly damaged.

Iris divisions should retain a few inches of rhizome and one fan of leaves, trimmed back halfway. Replant with the top of the rhizome just showing above soil level.

TUBEROUS ROOTS

Dahlias are an example of perennials with tuberous roots. The tubers should be cut apart with a sharp knife. Every division must have a piece of the original stem and a growth bud attached. After division they can either be replanted or stored for spring planting.



DIVIDING LARGE, TOUGH ROOTS

If the root mass is very large, or tight and tangled, you can raise the clump 1 to 2 feet off the ground and drop it. This should loosen the root mass, and you can pull the individual plants apart. This is not a good method for plants with brittle roots such as peonies.

Plants that have very tough, vigorous root systems (agapanthus, red-hot poker and ornamental grasses) may have to be divided with a shovel, saw or ax. You can also vigorously hose off soil to make the root system easier to work with.

DON'T DIVIDE THESE PERENNIALS

Some plants resent being divided and it should be avoided if possible. These include butterfly weed (*Asclepias*), euphorbias, oriental poppies, baby's breath (*Gypsophila*),

gas plant (*Dictamnus albus*), Japanese anemones, false indigo (*Baptisia*) and columbines (*Aquilegia*).

Lenten and Christmas roses (*Helleborus*) are very difficult to move when more than a few years old. Usually you can find tiny seedlings around the base. These are easy to move.

Lavender cotton (*Santolina chamaecyparissus*) and several other perennials are actually small woody shrubs and should not be divided. These include perennial candytuft (*Iberis sempervirens*), lavender, rosemary, southernwood (*Artemisia abrotanum*), and several other artemesias. These plants often have rooted layers (branches that have developed roots while touching the soil). The layers can be cut off the parent plant, dug up and replanted as though they were divisions.

PLANT THE DIVISIONS and never allow divisions to dry out. Keep a pail of water nearby to moisten divisions until they are planted. Trim all broken roots with a sharp knife or pruners before replanting.

Plant the divided sections immediately in the garden or in containers. Replant divisions at the same depth they were originally. Firm soil around the roots to eliminate air pockets. Water well after planting.

Fall-divided perennials should be mulched in the upstate the first winter to prevent heaving caused by alternating shallow freezing and thawing of the soil. The best winter mulch is loose and open such as pine straw, Christmas tree limbs or leaves.



Decorate Your Christmas Tree Naturally

Whether they are 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 some of your own natural craft ornaments for your Christmas tree. You may even decide to grow certain plants specifically for crafting a special ornament for your tree. Your tree will be unique because of the available materials you work with and the personal touches you add to the ornaments. A large Christmas tree seems to devour small ornaments, so this is a perfect way to use up your old or faded natural materials that still have some structure. You can spray paint silver or gold over your dried materials to give them a warm holiday glow.

Each family member can get involved with hand-made decorations made by family

members. But if you want nature inside for the holidays, you must begin collecting early. For the best decorations, keep your eyes open year-round. Items can be found in wooded areas, meadows or right from your own yard and garden. There are some fun and unique ways to bring the outdoors inside for the holidays. Right now is the time to start collecting your natural materials for your tree. Here is a list of things to gather throughout the summer and fall.

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 in silver or gold, glittered or just add fake snow to cap them with. Cluster several different sizes and types of cones together for variety, along with fresh evergreen branches.

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 other nuts you have collected, like black walnut. Different varieties of nuts in the shell can be grouped and glued together and hung with a bow. Nuts can also be spray painted gold to add a sparkle.

Use **dried flowers** to create small bouquets or little nose gays for a beautiful addition. 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.

Seedpods can be one of the prettiest of all decorations. They can add a lot of color to the tree and there is no limit to where you can find these. The 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.

Osage orange or hedge apples, gathered in the fall, are transformed into ornaments with decorative seed patterns. Cut the large fruit into ½ inch thick slices, allow to dry in the oven and spray paint both sides gold. After they dry simply insert ornament hangers into the fruit 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 also.

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 inch thick, dip in a solution of 1/2lemon concentrate and 1/2water. Make sure that the fruit is well covered. Line several cookie sheets with brown paper bags and heat oven to 175 degrees. Leave in oven for two hours, turn fruit over and leave in oven at least 1-1/2 more 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 is not hard to find the little **strawberry ears of corn**. They can be hung in clusters on the tree with your cup hook in the back and a bow to brighten up the new ornament. Spray paint dried okra seedpods and small gourds gold to cast a warm glow and 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 on the tip of the 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, and they can be used for your natural Christmas tree. Remember, there will not be another Christmas tree like it in the whole world.



Beatrice High School Arboretum Student and Community Involvement

(This article was written by Joan Christen, Ph.D, Beatrice High School Science Instructor, Science Club Co-Sponsor, and Science Curriculum Co-Chair)

According to the National Science Standards, “Learning science is something students do, not something that is done to them.” This premise forms the foundation of the Beatrice High School outdoor education classroom and butterfly garden projects. The projects are the basis of inquiry learning outdoors. Students take a more active role in their science classes when given the opportunity to ask questions and explore natural areas of interest. Botany students have an abundance of plants and insects to observe, grow, and identify. Advanced independent study research projects such as

the effect of algae on water retention in soil, the symbiotic relationship of fungus (yeast) and plant roots to overcome petroleum pollution, and observations of the changing soil profile have been conducted.

The BHS Science Club has been the recipient of grants from the Nebraska Statewide Arboretum (NSA) (funded by the NET). The first project, P.O.N.D.S.I.T.E. (Providing Opportunities for Natural Discoveries in Scientific Explorations of the Environment), was a combination outdoor education classroom complete with pond, butterfly garden and prairie restoration area. The second project, P.L.A.N.T.S (Prairie Landscapes and Natural Tree Sites) built upon the first by adding shrubs, trees, native perennials and perennials from NSA’s GreatPlants® program that are especially suited to this region. The site was designed with year-round interest in mind. Spring

brings the flowering of bulbs, redwood, serviceberry and chokeberry. Summer and fall see the blooming of perennials. Grasses maintain interest into the winter months. In addition to the sciences, art, social studies, Spanish and English instructors have also utilized the site in their lesson plans.

The best way for a community project to be successful is to include the students in the planning and allowing them to take ownership of the process. For instance, the two-pond system designed by the Science Club students could have easily been dug using machines. However, digging it by hand allowed the students to take ownership, have fun in the process, and resulted in members of the community working together to create a place of beauty, enjoyment and relaxation. The students took ownership of the project and got to meet and work with members of the community—who in turn took ownership in the school.



Part of the success of a project like this lies in sparking the imagination of the students. Because a project like this had not been done before at the high school, it was hard for the students to visualize what possibilities lay in the barren clay site behind the school. Providing the “vision” can be accomplished in many ways. Using the internet to research is an excellent way to begin. Students can see other projects and start to think about what they would like to see in their project. Brainstorming at a science club meeting led to the formation of a

committee to research the types of plants that would grow well in Nebraska. Students also came up with other ideas to improve the site (including the building of the greenhouse) and the Science Club voted to construct a bridge over the stream between the two ponds to add to the appeal of the water feature in the arboretum.



Another component is asking other members of the community for help. Our local Earl May Nursery & Garden Center, along with the one in Shenandoah, provided a free preliminary drawing of the arboretum based on the ideas of the students. They also provided labor and pool maintenance and donated plants and other educational materials. Others in the community donated rocks for the pond, wildflower and grass seed, mulch, soil and river rock. The Beatrice Daily Sun has been a terrific source of publicity for our projects—increasing interest and participation. It is important to simply ask, and to remember to say “thank you!”

At Beatrice, we are blessed with a supportive administration that sees the importance of these projects. Principal Jason Sutter says the projects have “brought an excitement and renewed enthusiasm for science” to Beatrice High School. The custodial staff has greatly helped in maintaining our projects over the summer. The students continue to maintain the site on scheduled workdays throughout the year. The projects continue to impact the lives of students at Beatrice High School. Thank you for allowing us this tremendous opportunity.



Dried Flowers for Winter Crafts

Many gardeners have craft projects in mind when they plant the seeds of flowers and herbs that maintain their color and form when dried. Everlastings or dried flowers are plants that retain their shape and color long after they have been picked and dried. A wreath or winter bouquet displays the everlasting beauty of the season's bloom.

They are available in a wide variety of shapes and colors, from the deep yellow of 'Gold Plate' yarrow to the vibrant purples of statice and gomphrena.

Focus on growing or collecting everlastings that can be dried simply by hanging in a warm, well-ventilated area out of direct

sunlight. Your plants are dry when the stems snap easily. This can take up to three weeks.

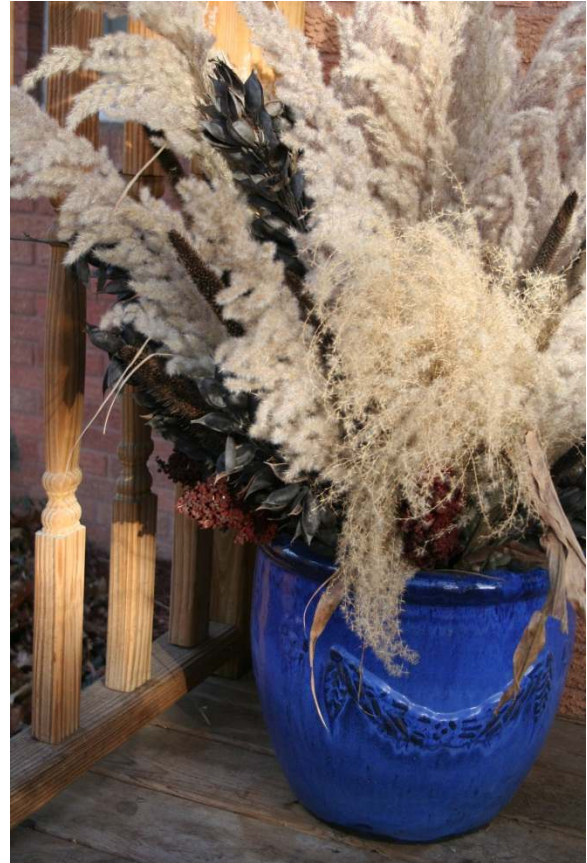
Ornamental grass seed heads, leaves and seedpods are also something to include when drying. Grasses are very effective when dried and displayed in outdoor containers on a deck or patio. Display with pumpkins and potted mums in fall and then with evergreen boughs and container arrangements for the entire winter season. When dried properly grasses will last all through the season without deteriorating.

Drying Flowers

Collect flowers in the cool of the morning after the dew dries or in the evening. Many plants will wilt if collected on hot days, often ruining the flower shape and color. Strip the leaves from the stem to help reduce the drying time. Seedpods should be collected soon after they mature to prevent them from shattering while drying or in the arrangement.

Arrange the stems, cut evenly and bind with a rubber band while you are collecting to make handling much easier. Branches that are tied with a rubber band will accommodate the shrinking stems as they dry. Keep the bundles relatively small so the drying air can move between the stems. Then hang them upside down to dry with a string or twist-tie on a nail. If the flowers are hung to dry, they dry with stems and heads straight. The best color is retained when dried quickly at 105-110 F. Try using a fan to increase the air flow and reduce the drying time. A garage or shed is probably the most convenient location to dry flowers. If possible leave the door or windows open to provide some air movement during the drying process. Another option is to dry flowers in a shed with a wood stove.

After they are completely dry you can store them in a large box or hang them in a dry area out of the way. In general there is no need to spray everlastings with a fixative if they are picked at the right time.



Rules for Picking

When harvesting flowers or grasses for drying there are some general rules for picking for flowers to retain their shape and to remain colorful. There are a number of flowers that dry easily, however there are others that fade or shatter if picked too late. The best rule of thumb is to experiment on a number of different flowers and blooming stages each year to find out the best time to pick. There are a few general rules regarding picking flower for drying.

- Flowers that open after picking. Pick the bud as the first set of petals opens (example: strawflower, globe thistle, beebalm, chives, rose).
- Flowers that contract after picking. Pick flower clusters as the center buds open and sides just beginning to open. (example: tansy, ageratum, feverfew, calendula).
- Flowers that remain the same after picking. Pick when fully open and before the color begins to fade. (example: yarrow, gomphrena, statice, cockscomb).
- Spike-type flowers. Pick when ½ is developed, but before the bottom begins to fade. (example: salvia, goldenrod, larkspur, gayfeather).
- Pick grasses when the seed heads are fully ripe and while the stems are still green.



Annual Plants

calendula
 cockscomb
 dusty miller
 globe amaranth
 larkspur
 statice
 strawflower
 sweet Annie

Perennial Plants

artemesia 'Silver King'
 beebalm
 black-eyed susan
 cattails (pick when first turn brown)
 feverfew
 gayfeather
 globe thistle
 goldenrod
 pearly everlasting
 sea holly
 sea lavender
 sunflowers
 tansy
 yarrow

Seed Pods

love-in-a-mist
 Baptisia
 poppy
 prairie coneflowers
 St. John's wort
 sumac

Ornamental grasses

indiangrass
 switchgrass
 sand lovegrass
 ravenna grass
 big bluestem
 maiden grass



Woody Floral Plants Brighten Outdoor Containers

Once the weather starts to cool in the fall it's easy to mourn the passing of the gardening season. Think, instead, about using the colors of fall foliage as a palette for autumn containers. Just as a

garden can be a work of art, a well-planned container garden can be just as attractive. Carefully selected plants will result in a beautiful display from fall through winter. The standard rule for

growing plants in a container through winter is that the plants should be hardy two zones colder than your garden. Alas, the container designs I'm referring to for my fall and winter displays aren't using live plants, but the colorful cut stems, berries and branches from nature's harvest. A patio, deck, balcony or doorstep can provide enough space for a decorative, attractive display.

In the fall after the first hard freeze I discard spent bedding plants from my containers and replace them with cut materials like woody florals, dried grasses, showy seed heads and clusters of berries to carry me into the next season's colors. Woody florals are cut from shrubs and trees that produce decorative materials, such as the brightly colored stems of redbud dogwood. Woody florals help create beautiful fall and winter designs in otherwise empty containers by adding a splash of color and height to the arrangement. Woody florals retain their bright colors for a long time in outdoor containers, for me often until early spring.



Designing a container that shines in fall and winter is easy when you realize the impressive variety of plant materials available to cut and use. You can gather in the wild, get permission to cut from a garden or you can plant a variety of plants in your own garden. So, if you're replacing plants in your landscape or adding new ones, look for varieties whose cut stems or seed heads give great color through the seasons.

I have several large containers at home that I enjoy filling with bunches of dried grasses, such as switch grass, indiagrass, big bluestem, little bluestem, or feather reed grass combined with the seed heads of baptisia, black-eyed susan, *Veronicastrum*, purple coneflower or prairie bushclover. I cut the grasses for my containers in late summer to early fall while the stems are still green and seed heads full and ripe (if you wait too long the seed heads shatter apart). I tie them with rubber bands and hang them in the garage until ready to use in the fall. The subtle colors of the grass arrangements are always more intense after a rain or snow shower and always there to greet me as I pass by on my way to the front door. My miniature, little prairie garden stuffed into a container, blowing in the breeze, is my sense of place....harvest season here on the Plains. A fall grass display shines throughout fall and looks even better when dusted with the first snows of winter.

After Thanksgiving I empty most of my grass container arrangements to make room for cut woody florals and evergreen branches to remind me what is best about winter. I collect a variety of cut evergreen branches, taking advantage of the different textures and various shades

of green. For winter arrangements evergreen boughs can be thought of as the “filler” in the arrangement. I typically use a combination of Scotch pine, douglasfir, concolor fir, white pine, Japanese yew or juniper branches laden with blue fruit. Pine cones, berry clusters and cut colorful stems can be added as highlights, to add height, breadth and a splash of color.



Red-stemmed and yellow-stemmed dogwoods provide a nice vertical accent in evergreen arrangements, bunched together and tied with raffia. I have also used the bright green stems of Japanese kerria, the gnarly stems of corkscrew willow, the fiery red stems of scarlet curls willow or the purple-black stems of pussy willow. The cut branches of trees and shrubs adorned with bright clusters of persistent fruit make fantastic winter decorations for outdoor containers. Crabapple selections,

such as ‘Don Wyman’ and ‘Harvest Gold’ hold fruit through the winter, providing showy cut branches for containers, slipped into evergreen boughs or frozen into ice luminaries. Viburnums, such as ‘Wentworth’ American cranberrybush and ‘Cardinal Candy’ linden viburnum have bright red fruit that lasts through the season. My favorite plants for long lasting clusters of berries includes the thin arching branches of coralberry, redleaf rose for copious, colorful rose hips, bittersweet, hawthorn, the miniature cones of common alder, winterberry holly and ‘Blue Princess’ holly.

The use of woody florals in containers arrangements has been popular in the florist industry for years and demand for these colorful products continues to rise. The increased demand has led to the development of Nebraska Woody Florals, a consortium of Nebraska growers who have come together to provide florists with fresh woody florals of the highest quality. They provides wholesale florists with a wide array of high quality woody stems, harvested on demand for color and flexibility. Because the product is locally grown, shipping is kept to a minimum and stems are at their peak of freshness.

So next fall when you begin to clean up your outdoor containers for winter storage, remember to leave them out to decorate for the season using nature’s bounty. You can plan ahead now and begin planting around your home for a harvest of decorations for the fall and winter.



Field Notes: Dwarf Chinkapin Oak

Dwarf chinkapin oak, *Quercus prinoides*, is one of the best shrub oaks for landscaping or conservation plantings. It isn't as well known as its larger relatives, chinkapin and chestnut oak, but it deserves attention for a number of reasons. Many people don't have room for a large-growing oak, but still want the rugged adaptability and seasonal beauty only oaks can provide. Dwarf chinkapin oak can be used as a unique, small specimen tree in the landscape or as a tall shrub in wildlife plantings, shelter belts and shrub borders.

Native in much of the central and eastern United States. *Q. prinoides* occurs in the US from New York to southeastern Minnesota, from southeast Nebraska to central Texas, east to northern Florida and the Appalachians. It can be found growing on sunny sites in scrublands,

forest margins, prairies and exposed ridges, on deep sands and dry shale. It has been found thriving on the thin, calcareous soils of southeastern Nebraska. But it is not very abundant in much of its range, and has become rare in many areas. It is listed as imperiled in eight states and vulnerable in five more.

The height of this tree rarely exceeds 15' with a similar width. It takes a few years to get established but is well worth the wait. I have heard it referred to as an "oak at eye level." The elliptically-shaped leaves resemble those of chinkapin oak- lustrous, dark green, thick and leathery, often with wavy margins. In fall the chestnut-like leaves turn a yellow-brown to bronze, sometimes turning a blazing orange-red before dropping in fall. In early spring the emerging foliage and abundant male catkins are all at eye

level, easy to observe and enjoy. The yellow-green catkins add another season of interest for the oak. In fall the show continues with abundant clusters of tasty ½" acorns that change from green to yellow with brown vertical stripes, finally to a rich brown, and can form on trees only 3-4 ft. tall! Unlike many oaks I've seen this one have a good crop of acorns almost every year. The acorns, low in tannins, are also less bitter and a favorite of turkey, deer, raccoons and squirrels.

You can grow this tree as a large many-stemmed shrub with picturesque branching or prune it into a single trunk to expose its gray, flaky bark. It grows best in full sun and deep, well drained soils but will also thrive in clay and nutritionally poor soils. The plant can tolerate high winds, dry or moist soil and has been hardy to -40 degrees. Dwarf chinkapin oak will often produce suckers and will form thickets if the sprouts aren't controlled. This spreading rhizomatous habit is a trait developed to help a plant rejuvenate after fire has killed the top stems.

I have witnessed no serious insect or disease problems, although a leaf spot, of little or no consequence, will occasionally infect the tree. Propagation is easy from seed, but they quickly lose viability if they are allowed to dry out.

They can be stored moist and cool over winter or sown in an outdoor seed bed, where they should be protected from mice or squirrels.

Dwarf chinkapin oak is a small tree that will help satisfy the continued demand for new trees that are native, ornamental and compact. Many properties don't have room to plant an oak, but why not the dwarf chinkapin?

Overview Box

Name: Quercus prinoides

Common Name: Dwarf Chinkapin Oak

Hardiness: Zones 3 through 8 with proper seed origins

Mature Height: 15 feet to 20 feet

Mature Spread: 10 feet to 15 feet

Classification: Tall shrub or small tree

Landscape Use: Specimen plant, border and edge plantings, acreage screenings, wildlife

Ornamental Characteristics: Lustrous green, very clean foliage; spring catkins, fall acorns at eye level; multistemmed, rugged winter habit; bronze to red fall color.



Field Notes: *Liatris punctata*

The genus *Liatris* contains 40 North American species, and more if you count the variations of some species and hybridization of others. There are at least seven species of gayfeather or blazing star that occur naturally in the Great Plains. The moisture-loving eastern native, *Liatris spicata* 'Kobold' or spike gayfeather, is the most common garden species. Having grown over a dozen different species of gayfeather over the years, I think they are all worthy of more attention but if I had to pick one, it would be the tough, water-wise species called dotted gayfeather, *Liatris punctata*.

Dotted gayfeather was described for science in 1834 by British botanist Sir William Jackson Hooker. It is a true Great Plains plant, found from western Minnesota to Alberta south to Arkansas

and New Mexico at elevations below 8,000 feet, and hardy to zone 4a. A member of the Asteraceae (sunflower) family, it has a deep, moisture-storing taproot, making this species the most drought-tolerant of the gayfeathers and blazing stars. Prairie ecologist Dr. J. E. Weaver found roots penetrating native prairie soils to a depth of 7' in heavy clay and 11-16' in lighter soils.

The narrow, grass-like leaves are gray-green, 4-6" long and form an 18" clump. In late summer, erect flowering stems arise up to 18" high from the basal tuft. The sandpapery leaves spiral around the stem, becoming smaller as they rise, and are covered with tiny "dots" of resin, giving rise to its common name. Blooming from the top down 6" or more, the bright pink-lavender spikes bloom from two to

four weeks. In fall, the seed head spikes are very attractive, with short, feathery plumes persisting well into winter.

Dotted gayfeather does well in any well-drained soil, but stems are more compact and upright in infertile, dry, gravelly soil. They should be grown in a sunny location, either from seeds or root cuttings planted in late fall or early spring. The seeds are easy to germinate after a period of cold, moist stratification. To keep the roots from girdling, plant seedlings in root-pruning containers to force a branched root system.



Dotted gayfeather will take several years to establish as it develops its extensive root system. The first growing season plants may only produce two leaves and grow to 5" high but by the third growing season they should

produce many flowering spikes. Though slow to develop, they have a long life span and can persist for many years without supplemental irrigation.

Ideal for planting in native grass meadows, bank covers, trough gardens and as accents, it combines well with prairie grasses such as blue grama and little bluestem or silver-leaf plants like *Artemisia frigida* or winterfat. The flower spikes are particularly attractive when planted with the bright yellow *Helenium amarum* or *Calylophus serrulatus* 'Prairie Lode'. In winter, combined with *Penstemon grandiflorus* and the blackened foliage of *Baptisia minor*, the feathery seedheads are intensified when backlit by the low angle of the winter sun.

Overview Box

Name: *Liatris punctata*

Common Name: Dotted gayfeather

Hardiness: Zones 4a-8

Mature Height: 18 inches

Mature Spread: 18 inches

Classification: Herbaceous perennial

Landscape Use: Hot, dry, perennial borders; prairie meadows; rock or trough gardens.

Ornamental Characteristics: Compact, grass-like foliage clumps; bright pink-lavender flower spikes in late summer; feathery seedheads into winter; fresh or dried cut flower; attracts bees and butterflies.

Fine-textured Perennials Can Take the Heat

It's challenging to grow plants in the Great Plains. To survive the hot, humid summers and cold, dry winters, plants have to withstand extremes of wind, temperature and drought. Many of the plants that are best adapted to this climate are very fine-textured. The limited leaf surface area minimizes the impact of wind and greatly reduces moisture loss. This adaptation for heat and dryness is practical, but it also gives the plants a graceful, fine-textured beauty.

Here are a few of my favorite fine-textured perennials for the Great Plains landscape.



Name: *Dalea purpurea* 'Stephanie'

Zones: 4-8

Size: 18" high and wide

Conditions: full sun, well-drained soil

This is an exceptionally attractive, fine-textured wildflower that can survive both drought and extremes of

temperature. The stiff, upright stems emerge in spring, growing into a bushy, knee-high plant, with sweetly scented leaves, divided into very narrow segments. In summer, bright red-violet flowers top the plant, shooting up like pop bottle rockets on the 4th of July. This plant is at its showiest when grown en masse with prairie natives, such as *Artemisia frigida* or *Scutellaria resinosa*.



Name: *Amsonia hubrichtii*, Arkansas bluestar

Zones: 4-9

Size: 3' high and wide

Conditions: full sun to part shade, well-drained soil

This is an excellent, dependable plant that is worthy of any garden. Upright stems emerge in early spring and rapidly extend to their mature size. The fine, thread-like dark green leaves unfold along the thin stems to form a very fine-textured mound of foliage. Plants are topped with starry, pale blue flowers in May and June. In autumn, the foliage turns a lovely golden-yellow, one of the few herbaceous perennials that provide dramatic fall color.



Name: *Geum triflorum*, prairie smoke

Zones: 1-7

Size: 12-15" high and wide

Conditions: full sun, well-drained soil

This Dakota native is one of the first plants to bloom in spring with reddish-pink, nodding flowers. The flowers soon give rise to feathery silver and pink seedheads resembling the hair of a Troll doll. The leaves are softly hairy and fern-like, turning red in fall and remaining evergreen throughout winter. My favorite companions for this distinctive plant include pasque flower, *Pulsatilla patens*, and Fremont's clematis, *Clematis fremontii*.



Name: *Clematis hexapetala*, 'Mongolian Snowflakes' bush clematis

Zones: 4-8

Size: 30" high and wide

Conditions: full sun, well-drained soil

This sprawling, non-vining clematis has clusters of white, 1 ½" fragrant flowers atop rich, dark green linear leaves in late spring. The bright, six-petaled flowers soon develop into feathery, bright silver seedheads that put on a spectacular show into July and August. Both the flowering stems and seedheads are excellent as cut flowers and have a long vase life.



Name: *Sporobolus heterolepis*, prairie dropseed

Zones: 3-8

Size: 30" high, 24" wide

Conditions: full sun, well-drained soil

This is one of my favorite prairie grasses because of its elegant, fountain-like habit and fine, thread-like, glossy leaves. The dense mound of bright green foliage turns orange to copper in the fall, with airy, open flower panicles held high above the foliage. The flower panicles are strongly fragrant when bruised and are especially attractive when illuminated by the setting sun. I like to plant it with *Penstemon grandiflorus*, *Amorpha canescens* and *Allium cernuum*.



Gardening with Prairie Plants

What is native to you?

Do you consider yourself a “prairie purist” when it comes to choosing plants for a prairie garden. That is, only recommending or choosing plants that are native to Nebraska? Perhaps a better approach is to think of choices as “regionally native” to the Great Plains or Midwest.

A reasonable approach for home gardeners is simply to use whatever prairie plants can be found, but for restoration plantings, every effort should be made to collect and preserve the genetic diversity of the local species.

Preparing a Planting Bed

We live in an area where prairie once existed, so it should make sense to convert to a prairie garden. The plants should be perfectly suited to the climate and temperature extremes. A prairie

landscape requires none of the water needed for conventional lawns. And the need for chemicals on weeds and insect pests is usually eliminated. But the well-drained prairie soils that once supported the plants are no longer there. Over time they have been forever altered, plowed, scraped, terraced and eroded away to leave most of us with dense, heavy urban subsoil. For many prairie plants to thrive, especially dryland species, soil prep is essential.

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

Solarization is a popular technique for small areas of bluegrass, fescue, and weeds. First cut the grass or weeds very short then lay down a layer of clear plastic for up to 45 days to smother and cook them. You can also lay down layers of newspaper (at least 10 sheets)

over aggressive weeds. Spread 4-6 inches of a topsoil/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, on those perennial and annual weeds that are unfazed by hand-weeding.

Prairie Garden—A Grass Menagerie



When designing a pocket prairie plan on at least 50 percent of the plant material be prairie grasses. Some prairie wildflowers, competing for the same space, sunlight and moisture as grasses, can take advantage by growing too large and flopping, or by spreading to take over the bed. In a prairie garden you need to make root competition so fierce that all the grasses and forbs are shortened and nothing is allowed to be aggressive. A garden with a plethora of grasses will keep any aggressive wildflowers in check through competition. Moreover, many spring and early summer wildflowers simply set seed and go dormant as taller grasses grow above them later in the season. They look great early in the season, but by the heat of summer a sweep of wildflowers can look tired and unattractive to most gardeners. Grasses will work to hide the dormant stems of these spring bloomers through the summer and into fall, all while forming

colorful, showy seed heads.

Grasses can be divided into short grasses and tall grasses, but they can also be divided by season: cool season grasses are green as soon as temperatures rise above freezing. Warm season grasses grow in the heat of summer and bloom in late summer or early fall.

- Evoke a sense of place with prairie landscapes. Instead of trying to imitate other places and import other traditions and styles, why not celebrate the intrinsic beauty of Nebraska in our cultivated landscapes. From the eastern woodlands and panhandle pinelands, to the tallgrass prairie and sandhills, you can develop a Nebraska style landscape. The best model for creating a prairie garden is a local prairie remnant, although unplowed prairies are now extremely rare. A prairie garden is simply a portrait of the vast prairie landscape.
- Prairie gardens benefit wildlife that depends on grassland habitats. Prairie plants provide the food, shelter and nesting cover for songbirds, beneficial insects and other critters that conventional landscapes cannot.
- A prairie landscape is ecologically sound. An established prairie landscape does not need watering, weekly mowing, herbicides, insecticides, or fungicides. If you continue to water after plants are established, the plants that survive will be those that require extra water, and you are stuck watering forever. Or you have to let them die and start all over, because the plants that “belong” on your site, the ones that can live on rainfall, rotted because they got too wet or were outcompeted by more water tolerant ones. In

- the Great Plains, especially during a drought year, a watering every month or so may be necessary to keep your garden from going dormant. If you do not water, and your garden does go dormant, it is okay, nothing is likely to die.
- A prairie landscape will provide erosion control. The roots of grasses and forbs arrange themselves in layers so that every cubic inch of soil is exploited for moisture and nutrients. A well developed sod layer, coupled with a myriad of thin grass stems, lets rain soak in and allows almost no runoff.
 - Dr. John Weaver, the famous prairie ecologist from UNL, found over 90% of the foliage in some prairies to be big bluestem; when mowed back to the ground, the clumps occupied only 14% of the soil surface. For gardeners that means space for spring blooming wildflowers!!
 - Dr. Weaver found over 200 individual plants per square yard in a tallgrass prairie near Lincoln! I'm amazed that, despite intense competition, prairie plants all seem to get along. Would you plant over 200 plugs in a square yard and hope they all get along?
 - Lowland prairie landscapes will help clean our water supply. Deep rooted prairie plants also have extensive surface roots that act as a filter, absorbing potentially harmful nutrients from the water as it moves down the soil profile or as surface water along watersheds.
 - A prairie landscape around your home is a great learning experience. A natural prairie will attract songbirds, butterflies, toads, voles, and a host of other small animals. What a wonderful way to educate your children, by observing the changes throughout the seasons, you will learn and appreciate how they contribute to making all of nature work together.
 - Prairie plants are adapted to cope with Great Plains weather extremes. Specific prairie plants are able to withstand drought, wet, heat, cold, wind and hail, not to mention wide temperature fluctuations.
 - Specific prairie plants will adapt to various soil types and topography. In prairie gardening, the plants need to match the site. When deciding which plants to use, the key is to figure out where your soil is clay, loam, sand, gravel, rocky, wet, mesic or dry, and to gather together a mixture of plants adapted to those sites. In traditional gardening, we never worried about matching the plants to the habitat. We just stuck it in the ground and gave it lots of TLC.
 - Using and growing prairie plants will benefit the local economy. Opportunities exist for growers and producers of locally native seed and plant plugs for conservation plantings, roadsides, land reclamation, wholesale nurseries and landscape contractors.
- I've chosen some of the best sun-loving wildflowers for the garden using the following prairie models. There are many more to choose from but this represents plants that are readily available through local sources or mail order nurseries.

Tallgrass Prairie Garden



These sunny, mesic prairies are on rolling ground, where lowland prairie species are found in swales, tolerating periodic flooding and drought. These plants are always ready to adjust to wetter or drier conditions, i.e. many can tolerate overwatering and drought.

A tallgrass prairie garden, neither too wet or not too dry, can reach 5-6' high and is typically used in larger areas or as a backdrop planting. Big bluestem and indiangrass should always be present in this garden, along with some switchgrass. To prevent lodging or floppy stems, avoid shady conditions and only water during times of drought.

These warm season grasses take awhile to green up in the spring so plant cool season wildflowers that are lush green as soon as temperatures rise above freezing, competing for space with cool-season weeds like henbit and dandelions.

If possible enrich the soil for your tall grass prairie garden by incorporating a few inches of compost. Many spring wildflowers emerge early, bloom for several weeks and often go dormant after setting seed.

Dryland Prairie Garden



Upland prairies are always well-drained and are the driest prairies in this area. Upland prairie plants are usually knee-high or less and require little if any supplemental irrigation once established. This garden should always have a base planting of little bluestem (*Schizachrium scoparium*), sideoats grama (*Bouteloua curtipendula*), prairie dropseed (*Sporobolus heterolepis*) with an understory of blue grama (*Bouteloua gracilis*).

Cool-season grasses, such as needlegrass and prairie junegrass should also be considered. When planning a border using plants native to dryland or rocky soils it is essential to improve the drainage of your site by raising the soil above the original grade. I use good garden topsoil or a mix of 1/3 gravel, 1/3 old soilless mix, 1/3 topsoil for plants that demand sharp drainage.

I use a light layer of gravel mulch on my dryland garden for topdressing: to provide a nice, uniform cover; xeric plants

like to reseed in this mulch; weeding is easy by cutting the young weeds with a hoe just under the mulch. Wood chips can hold too much moisture for these plants and they can crown rot.

Early Spring -- (Full Sun, Dry)



Prairie Smoke (*Geum triflorum*)—12"; Nodding pink flowers and feathery seedheads; attractive fern-like foliage; adaptable to wet or dry soils.

Pasque Flower (*Pulsatilla patens*)—15"; lavender cup-shaped flowers followed by silky, delicate seedheads; attractive, cutleaf foliage.

Dwarf spiderwort (*Tradescantia tharpaii*)—6"; clumps of grass-like foliage covered with hairs; purple-pink flowers bloom on and off for a month; foliage yellows then dormant; foliage reappears in fall.

Fremont's Clematis (*Clematis fremontii*)—15"; mounded, non-vining habit; Thick, leathery leaves emerge in early spring. Attractive 1" urn-shaped flowers with thick blue to purple petals.

Shining Bluestar (*Amsonia illustrus*)—3-4'; Easy to grow with light blue, star-like flowers atop robust stems in spring.

Tolerates drought, has glossy leaves that turn a nice yellow in fall; takes 3 years to mature.

Prairie Phlox (*Phlox pilosa*)—15"—bright pink flower, fragrant heads; hairy foliage; summer dormant.

Mid spring to early summer -- (Full Sun, Dry)



Dwarf Blue Indigo (*Baptisia minor*)—30"; Beautiful spikes of indigo blue flowers; Slow to establish; forms a nice mound of blue-green foliage; seed pods for dried arrangements.

Soapweed (*Yucca glauca*)—3-4'—stiff, sword-like foliage; masses of white, fragrant flowers on tall spikes; extremely drought tolerant.

Dwarf Leadplant (*Amorpha nana*)—18"; fragrant magenta spiked flowers with

orange anthers. Compact, mounded habit; slow to emerge in spring; cut back woody stems.

New Jersey Tea (*Ceanothos americanus*)—3'; Handsome, durable shrub with clean foliage and abundant clusters of white flowers in late spring; slow to establish but worth the wait; limit competition from aggressive plants; dried leaves make an excellent prairie tea.

Pale Purple Coneflower (*Echinacea pallida*)—3-4'; Sweet-scented coneflower with spidery petals, blooms early June-July; tall, robust stems make it a good cut flower.

Narrowleaf Coneflower (*Echinacea angustifolia*)—18"; pale pink drooping petals; blooms in early to mid June; rough, sandpapery foliage; distinct Great Plains native.

Wild Senna (*Senna hebecarpa*) fine textured leaves on 4-6' woody stems, topped with yellow pea-like flowers in summer, each with attractive black anthers; easy to grow in full sun; adaptable.

Ohio Spiderwort (*Tradescantia ohioensis*)—18"—linear, daylily-like foliage; topped with lavender flowers in late spring; flowers close by afternoon; summer dormant.

White Wild Indigo (*Baptisia lactea*)—5'—emerges late; several years to mature; worth the wait; milky white flower spikes in early summer, followed by showy black seed pods; long-lived.

Missouri Primrose (*Oenothera missouriensis*)—15"; shiny silver leaves with huge, delicious bright yellow flowers

in June, flowers close during the day; rebloom in fall;

Leadplant (*Amorpha canescens*)—4'; silvery green color immediately catches the eye, which is caused by very pubescent leaves. Dark purple spike-like racemes rise above the foliage in June and July.

Butterfly Milkweed (*Asclepias tuberosa*)—2; very drought-tolerant; showy dark orange-red flower clusters in summer followed by attractive seed pods in fall. Don't overwater.

Purple Poppy Mallow (*Callirhoe involucrata*)—15"; Low-growing cut-leaf native with bright purple-pink flowers all summer; best when allowed to weave between taller perennials.

Late summer to fall-- (Full Sun, Dry)



Rattlesnake Master (*Eryngium yuccifolium*)—4'; Yucca-like foliage; flowering stalks topped with clusters of small white honey-scented buttons; loved by bees!!

Scaly Blazing Star (*Liatris squarrosa*)—15"-- Rose-purple buttons in July; extremely drought tolerant.

Wild Quinine (*Parthenium integrifolium*)—3-4"--Large, bold leaves;

topped with clusters of flat-topped white flowers in the heat of summer; attractive black seed heads in winter; long-lived.

Purple Prairie Clover (*Dalea purpurea*)—18"; Bright lavender flowers on compact 15-18" bushy plants with as many as 40 stalks per plant. Full sun and well-drained soil.

Greyheaded Coneflower (*Ratibida pinnata*)—4-5'-- elegant deep yellow, drooping petals surrounding a dark brown cone-like center; *R. pinnata* to 4-5' and somewhat of a nuisance seeder.

Prairie Bushclover (*Lespedeza capitata*)—3-4'; tiny, insignificant creamy white flowers; silvery foliage. Rich brown seedheads attractive through winter.

Dotted Gayfeather (*Liatris punctata*)—18"—rosy- pink flower stalks in Sept.; butterfly favorite.

Aromatic Aster (*Aster oblongifolius*)—3-4'; Tolerates poor soils and drought. More compact and less likely to spread than the species. Blue flowers in fall. 'October Skies' and 'Raydon's'

Smooth Aster (*Aster laevis*)—3-5'; native with masses of bright blue flowers; blue-green foliage

'Wichita Mountains' Goldenrod --3-4'- masses of bright golden rods top plants, followed by showy seed heads; a butterfly and bee favorite.

Thickspike Gayfeather (*Liatris pycnostachya*)—4-5'--Rosy-purple flower spikes on 3-4' stalks. Full sun and combine with tall prairie grasses to reduce flopping; Fine for cut flowers.

Rain Garden—Full Sun, tallgrass prairie sites



Spiked Gayfeather (*Liatris spicata*)—3-4'; Rosy-purple flower spikes a favorite of bees, butterflies. Mounded, grass-like foliage; Fine for cut flowers.

Swamp Milkweed (*Asclepias incarnata*)—3-5'; Native w/ light pink flowers top plants; attracts butterflies, bees & hummingbirds; short-lived, but seeds around.

Joe-Pye Weed (*Eupatorium purpureum*)—5-6'; Choice selection with large clusters of lavender-pink flowers in late summer; butterfly magnet; prefers rich, moist soils so ideal for rain gardens.

Culver's root (*Veronicastrum virginicum*)—4-5'; attractive, long-lived; stiff, upright stems with clean, dark green linear foliage in whorls around stems; white/pink flower spikes top plant in early summer.

Golden Alexanders, (*Zizia aurea*)—2'—attractive, dark green foliage; yellow umbels in mid spring.

Turtlehead (*Chelone lyonii*)—3-4'; Upright 2-4' clump-forming plant ; handsome, dark green foliage; hooded, snapdragon-like pink flowers late summer to fall. Prefers rich, moist soils.

Queen of the Meadow (*Filipendula venusta*)—4-5'; attractive maple-like leaves; clusters of pink, cotton-candy like flowers top plants.

New England Aster (*Aster novae-angliae*)—4-5'; topped with masses of purple to pink flowers; can be a nuisance with reseeding; provide competition with tall grasses.

Purple Meadow Rue (*Thalictrum dasycarpum*)—4-5'—clean, columbine-like foliage; vertical stalks rise above basal foliage, topped with delicate white flower clusters in late spring.

Helen's Flower (*Helenium autumnale*)—4-5'—easy to grow and long lived; topped with unique, bright yellow flowers in fall; can flop so provide competition or pinch back to promote bush growth.

Weedy Natives to Watch Out For

The following list of aggressive wildflowers can be appropriate for garden use if they are maintained as a single mass planting, surrounded by a mowed surface or planted in a bed dominated by grasses. I've grown all of the following plants and some take advantage and seed into open spaces and others spread even when given intense competition.



Canada Goldenrod (*Solidago canadensis*)

Cup Plant (*Silphium perfoliatum*)

False Sunflower (*Heliopsis helianthoides*)

Jerusalem Artichoke (*Helianthus tuberosa*)

Maximillian Sunflower (*Helianthus maximilliana*)

Sawtooth Sunflower (*Helianthus grossurulatus*)

Pitcher Sage (*Salvia pitcheri*)

Meadow Anemone (*Anemone canadensis*)

New England Aster (*Aster novae angliae*)

Ironweed (*Vernonia fasciculata*)

Short-Lived Prairie Plants For Re-Seeding-- (Full Sun, Dry)

These wildflowers are nice additions to the prairie garden and although they are short-lived (1-3 years) they should still be included in your design. These beauties perpetuate in the garden by reseeding themselves. You can gather seed and sow it where you want it or let them seed out on their own and the garden becomes unpredictable, just like a real prairie. The following plants are all dryland species

and are best sited in well-drained soils. They love seeding in gravel mulch!



Black-eyed Susan (*Rudbeckia hirta*) showy yellow daisy-like flowers with black center cones in summer; native *R. hirta* is a 2' annual that will reseed itself.

Brown-Eyed Susan (*Rudbeckia triloba*)—3-4'—small, 1" yellow, daisy flowers with brown centers in late summer; very adaptable; good cut flower.

Plains Coreopsis (*Coreopsis tinctoria*)—3-4'—bushy plant with wiry stems and needle-like foliage; masses of small yellow-orange flowers in early summer; easy and tough, dependable.

Wild Larkspur (*Delphinium virescens*)—3-4'—vertical spikes lined with delicate white flowers in mid spring; summer dormant, so allow to reseed.

Lance-leaf Coreopsis (*Coreopsis grandiflora*)—2-3'—bright orange-yellow flowers in late spring; cut back after flowering or allow to reseed; combine with grasses to hide dormant look.

Wild Petunia (*Ruellia humilis*)—15"—dense, bushy plants; leaves covered with hairs; beautiful lavender flowers close in the heat of the day.

Prairie Ragwort (*Senecio plattensis*)—18"—bright yellow, daisy-like flowers top

upright plants in mid spring; summer dormant; ideal for naturalizing.

Shell-leaf Penstemon (*Penstemon grandiflorus*)—2'—flower spikes in late May; Allow attractive seedheads to persist all winter to encourage self-sowing.

Yellowdicks (*Helenium amarum*)—15"—dense, bushy plant with thin, wiry foliage; masses of yellow flowers in late summer to frost; very tough and dependable.

Prairie Coneflower (*Ratibida columnifera*)—2'—showy, deep yellow petals droop around upright cone in early summer.

Prairie Plants for Shade



Woodland Phlox (*Phlox divaricata*)—12"--Starry, lavender flowers bloom in the spring, are fragrant and attract hummingbirds and butterflies; summer dormant; reseeds to form attractive colonies.

Wild Columbine (*Aquilegia Canadensis*)--2-3'; Native spring wildflower with drooping, bell-like, 1-2", red and yellow flowers and finely cut foliage. Hardy even in dry shade.

Prairie Alumroot (*Heuchera richardsonii*)—18"; Tiny, yellow bell flowers on stems above dark green basal foliage. Heart-shaped leaves turn rosy-red after frost; prefers rich, organic soils, but tolerates dry shade.

Solomon's Seal (*Polygonatum biflorum*)—2-3'—leaves arranged along arching stems; small white flowers in spring; colonizing groundcover; yellow in fall with black berries.

Creeping Jacob's Ladder (*Polemonium reptans*)—8"-- Light blue, bell-shaped flowers in loose, clusters appear mid to late spring. Prefers moist, humusy, well-drained soil and part shade.

Violet Wood Sorrel (*Oxalis violaceae*)—4"-- Lavender-pink flowers in spring above shamrock-like foliage; from full shade to part sun; spreads to form groundcover; summer dormant.

Golden Alexanders (*Zizia aurea*)—2-3'

Wild Geranium (*Geranium maculatum*)—18"; Pink to lilac flowers in spring and early summer. Dark green, deeply cut foliage; will seed around to form colonies

Liverleaf (*Hepatica americana*)—6"; Spring wildflower emerging March-April. Stemless plant with large basal leaves and light blue/lavender/white anemone-like flowers. Needs moist, organic soils.

Jack-in-the-Pulpit (*Aeri*)—18"; Large leaves and unusual purplish or green club-like flower develops into cluster of bright scarlet berries. Woodlands plant for leaf/mold/humus soil in part of full shade.

Prairie Plants for Rock Gardens



Missouri Pincushion Cactus (*Coryphantha missouriensis*)—3-4"; beautiful yellow-bronze flowers in late spring; bright red fruits form in fall, persist through winter.

Pincushion Cactus (*Coryphantha vivipara*)—4"; Brilliant pink flowers w/ yellow anthers May-June; fleshy fruits follow. Eventually forms large clusters. Needs good drainage.

'Prairie Lode' Toothed Primrose (*Calylophus serrulata*)—6"; Yellow cup-shaped flowers bloom all summer on low semi-evergreen groundcover.

Prairie Skullcap (*Scutellaria resinosa*)-- Bright purple-blue flowers cover the plant from mid-May to late June. Small, gray-green leaves are in harmony with the small, round flowers.

Fringed Sage (*Artemisia frigida*)—15"; silver, fragrant foliage; can be short lived so allow to reseed.

Fendler's Aster (*Aster fendleri*)—12"; shiny, linear foliage; pinch back to encourage bushy growth; satiny white flowers in fall are fleeting, but beautiful; premier rock garden aster!!

Grasses that Deserve More Attention

Across the country there is a movement toward landscape sustainability, with the goal of creating a new landscape ideal that is not only aesthetically pleasing but also environmentally beneficial. In the Great Plains—where water is limited—prairie grasses rule! Many of them, however, are rarely used in landscapes and deserve more attention, especially as it relates to water quality, use and conservation.

Many communities across the U.S. are installing rain gardens, bioretention gardens and bioswales to demonstrate horticultural practices that conserve water, reduce stormwater runoff and help filter pollutants before they contaminate local water supplies. As it turns out, our native *Carex* and *Juncus* species provide a variety of benefits that are perfect for stormwater management plantings:

- The myriad of grass stems and leaves help slow fast-moving stormwater during spring rains, providing valuable erosion control.
- They are some of the best biological filters available and they provide food and shelter for wildlife.
- Most *Carex* and *Juncus* species are very adaptable to soil conditions, can thrive in heavy clay and are well-suited for wet mesic soils in spring and dry mesic soils in summer.
- Plants establish quickly, often reaching maturity by the second growing season. The dense clumps compete for space with winter annual weeds in early spring and keep any aggressive forbs in check.
- Native sedges come in a wide variety of forms and sizes for wet

or dry soils, sun or shade. In Nebraska, we've identified more than a dozen native species that are worth incorporating in landscapes. There seems to be a *Carex* for any garden situation!



Palm sedge, *Carex muskingumensis*

If there is one sedge that deserves to be planted in every garden, it's palm sedge. This clump-forming plant grows 2' high and 3' wide, with glossy, deep green leaves that radiate out from the stem, similar to a palm tree. This gives the plant an exotic, almost tropical appearance. Attractive, light brown seedheads top the plant in late spring and remain attractive into fall. Surprisingly drought-tolerant when planted in light shade, it does great as a marginal plant in pond gardens and streams. Its best use may be as a filler plant for bioretention gardens, drainage swales or rain gardens.



Bristleleaf sedge, *Carex eburnean*

This dainty little native sedge has very fine leaves, almost needle-like in appearance. It grows into an attractive clump about 6" high, emerging very early in the spring with thin, whitish-green flower spikes. The bright green thread-like foliage remains attractive all through the season and well into fall and winter. But don't let the delicate appearance fool you, this is one tough little plant! It grows naturally in open woods, often on limestone bluffs. This plant was made for dry shade and because of its fine texture, combines well with just about any broad-leaved shade plant. It also makes an ideal groundcover as a lawn alternative or an accent plant for rock gardens.



Seersucker sedge, *Carex plantaginea*

This is another native woodland sedge that deserves to be planted more. What I like about this sedge is the broad, shiny leaves, crinkled like ribbon or seersucker. The basal foliage emerges chartreuse very early in the spring and grows into an attractive clump up to 12" wide and tall. As the foliage is emerging, thin, black-tipped flower spikes rise up above the foliage. The flower spikes don't last long, but they are a welcome sight after a long, cold winter. The foliage darkens as the season progresses and remains attractive all through fall. It grows best in moist, organic soils, but tolerates dry shade and clay. This plant is ideal for shady rain gardens and water features or to help define a path in a woodland garden



Herbs for the Landscape

Do you know an herb when you see it? That's a tricky question because it makes us ask, "Just what is an herb anyway?" The short answer is simple "Useful plants." There you have a simple but accurate definition of herbs. It's accurate and thorough to add "herbaceous plants." When you see an herb in the Garden, here's the best way to enjoy it- just rub your fingers over the leaves and sniff your fingers for the aromatic essential oil of the plant. The usefulness of these pleasant plants includes three categories- gardening, culinary, and medicinal uses.

Gardeners in Nebraska like herbs because most are relatively easy to grow and many are water-friendly. Water requirements are not all the same however. Gardeners should pay special attention to drainage and moisture requirements of certain herbs, since many

are very sensitive to soil moisture conditions. Sage, rosemary, and thyme require a well-drained, slightly moist soil, whereas parsley, chervil, and mint grow best on soils which retain moisture. Raised beds may provide the necessary moisture and drainage requirements for herbs that require good soil drainage.

Some full sun herbs can do well in areas with partial shade, lessening their water requirements. Many will grow quite well with only 6-8 hours of direct sun each day. If using raised beds, the soil tends to dry out, so it's especially important to use mulch.

Bob's Top Herbal Uses for the Landscape

- Try something different than the typical formal herbal design; try

landscaping with herbs Nebraska style. Herbs that like it sunny, hot and the soils well-drained combine well with our dryland prairie plants, including grasses. Rather than trying to create a Mediterranean look go for a xeric, western look. Tall grasses help to shade plants from the hot summer sun.

- For ornamental grass, plant lemon grass in containers as the specimen plant or plant in the margins of a water garden. Use sweet grass as a groundcover in confined, moist areas.
- For butterfly gardens try combining dill with butterfly bush; great companions with flat-topped yellow flowers and lavender spikes.
- Common garden sage as a foundation plant or facer for the shrub border; prune hard after flowering in spring (don't prune in fall or you'll eliminate next spring's flower spikes)
- Fern-leaf tansy as a fern substitute for full sun; decorative, fern-like leaves; cut back several times a season to maintain compact, 18" habit.
- Bronze fennel combined with penstemons, black-eyed susan and 'Lady in Red' Salvia; all are self-seeding and create new and different combinations every year.
- Combine the vase-shaped hyssop, with its attractive narrow leaves and small purple flowers with the mounded showy calamint, with its fuzzy serrate leaves and prolific pink flowers.
- Plant the self-sowing annual herbs borage and chamomile together for a delightful combination of blue star-shaped flowers and white daisies. Add calendula to ice the cake.

- Consider planting a few useful prairie plants as herbs in your garden. Leadplant, purple prairie clover and New Jersey tea all make a delightful prairie tea. Purple poppy mallow's leaves were chewed for their pleasant taste and added to stews as a thickening agent; root dug and stored.
- Plant the lovely wild garlic, *Allium canadense* with its rounded, pink flower heads in spring. After blooming it goes dormant while developing small garlic heads in the soil; a delicious, nutty flavor used to flavor many dishes.
- Narrowleaf coneflower, *Echinacea angustifolia* root used as an antidote for snake bites, stings, toothache; burns bathed in juice; steam bath to render the great heat enduring; root is pungent; blood purifier; tonic; antiseptic; intestinal worms.
- Wild bergamot, *Monarda fistulosa*, makes a tea soothing for sore throats. Pawnee recognize 4 varieties that grow on the plains from "shot many times still fighting" to "ill smelling;" blossoms used as an eye wash and as a remedy for fevers and colds; treating respiratory problems; *M. fistulosa* var. *mentifolia* is native to western Nebraska and named 'Wahpe Wahstemna' from the Lakota.

Which Herbs Are Easy to Grow in My Garden or Landscape?

It is beyond the scope of this fact sheet to discuss all of the culinary herbs. Following is a more detailed description of popular herbs that can be easily grown in Nebraska.

Artemesia(s)

Offers silver-gray soft foliage that combines well with any color in the garden. Great for blending together colors and textures. 'Sea Foam' is a finely filigreed selection with a frothy appearance. Fringed sage (*A. frigida*) is a native with a pungent scent and arching stems. The stunning 'Oriental Limelight' has tall brightly variegated yellow and green finely cut foliage. Creamy white flowers tip the plants in fall to 4' high. All Artemesias need full sun and dry, well drained soil to persist in the landscape. Remember to plant with other xeric plants.

Basil

Basil or sweet basil (*Ocimum basilicum*) is a popular, tender, annual herb. Basil is grown for its aromatic leaves which are used fresh or dried as a flavoring.

Thai basil 'Siam Queen' has mounding habit, green leaves and thick purple stems and flowers; dark opal and purple ruffles great combined with red salvias; 'Magical Michael' has attractive purple tipped shiny leaves great for borders, containers. My favorite is 'African Blue' with textured leaves, blue-green on the upper surface and purple on the lower surface, attractive.

Bedstraw, Lady's

Beautiful display of yellow flowers; source of red and yellow dyes. Thought to be the plant used in the manger on Christmas Eve. Forms a nice rich green groundcover, beautiful fine texture; try planting at the base of leggy shrub roses with creeping baby's breath or near the edge of a water feature.

Chamomile

The attractive daisy-like flowers make an excellent tea. Wonderful ornamental annual that will reseed under favorable conditions.

Chives

Chives, *Allium schoenoprasum*, is a perennial, native to the Orient. It was first used by Chinese and then ancient Greeks. The fine-textured, grass-like habit make this plant an ideal compliment for perennials with bold leaves; plant 'Forescate' selected for its bright, rosy-pink round heads.

For example don't plant liriopse - you can't eat it! Plant garlic chives - they have the same function in landscape design. White flowers great with Russian sage, black-eyed susan, Ratibidas.

Dill

Dill, *Anethum graveolens*, is native to the Mediterranean area and southern Russia. Dill is a hardy annual, and sometimes is grown as a biennial. Dill should be direct-seeded in spring, at a 10-inch spacing. Since dill has long tap roots, it should not be transplanted. Dill is a great plant in butterfly gardens since butterfly larvae feed on dill.

Feverfew

One of the best for landscaping with colorful annuals. The variety 'Tetra White Wonder' with its fully double little white daisies will bloom all season if deadheaded. Makes an excellent cut flower as well. Lovely with bronze fennel and red salvias.

French Tarragon

French tarragon, *Artemisia dracunculus*, originates from southern Europe. French tarragon is a woody perennial that will grow 2 feet tall. It produces narrow, bright green leaves and

can easily be shaped into an attractive rounded habit. Plant in full sun, and in rich, well-drained soil. French tarragon is prone to root rot in heavy and wet soils.

Germander

Germander, *Teucrium chamaedrys* is one of the best for the front of the border with its neat, rounded habit and thick, shiny, dark foliage highlighted by rose-purple flowers. This creeping evergreen can be sheared in early spring to maintain desired size and shape.

Horehound, Silver Edged

This attractive horehound, *Marrubium rotundifolium* has velvety green, rounded leaves that are edged in creamy white. It forms an evergreen mat to 4" high. Needs well-drained, dry soils. A fine groundcover to combine with blue or gray leaved grasses and perennials, to add contrasting texture and color.

Lavender

The hardiest lavenders for the Great Plains are the English lavenders; 'Munstead', 'Hidcote' and 'Lady' have performed well with well-drained, dry soils and protected from desiccating winter winds. For longevity in the landscape allow fall leaves to blow in among the plants to protect the persistent foliage from desiccating winter winds.

Lovage

Lovage, *Levisticum officinale*, is a striking ornamental with shiny, celery-like foliage to 2'; robust hollow stalks arise from the foliage up to 5-6' high topped with yellow flat-topped flowers in late spring. After flowering I cut mine back hard to the basal foliage to encourage new growth, otherwise it

would rather go dormant after setting seed. Excellent vertical addition to the border; looks great with Baptisias, Thermopsis

Mints

Mints, *Mentha* spp., are a group of herbs that are mostly native to Europe and Asia. Normally, mints are such rampant growers that they will quickly overwhelm other plants. Invasive mints should be planted in sunken clay tiles to prevent them from spreading. Best planted between a rock and a hard place or in raised confined beds. I plant mine in a confined space, between the a set of seldom used steps leading to my upper lawn. 'Grapefruit' has large puckered leaves; 'Variegata' has attractive gold flecked leaves; silver mint has handsome gray-green foliage. Silver mint is an aggressive mint with beautiful silvery-gray foliage.

Oregano

Oregano, *Origanum vulgare* subsp. *hirtum* is native to the Mediterranean region of Europe and central Asia. Oregano reaches a height of 12-24 inches, and a width of 10-20 inches. It requires a site with full sun, and well-drained soil. The attractive small white flowers are produced in loose clusters at the ends of the stems in late summer; a great source of nectar for bees and butterflies. For hardiness in Nebraska nothing beats the true greek oregano, but the golden oregano is also worthy of groundcover use. I particularly like it combined with curled parsley or any perennial.

Parsley

Use curly parsley as a flowerbed border mixed with edible annuals such as

nasturtiums, pansy, viola or calendula. The dark green foliage and attractive mounding habit make it a favorite herb for the perennial border. Allow to reseed to perpetuate in the garden.

Rosemary

Rosemary, *Rosmarinus officinalis*, is a tender perennial, hardy to zones 8 to 10. It is native to the Mediterranean region, Portugal, and northeastern Spain. It is pungent, somewhat piny, and mintlike yet sweeter. Plant rosemary in a sunny location with well-drained, slightly acidic soil. Harvesting can be done throughout the year. Attractive textural plant great in containers for portable transport to winter location.

Southernwood

Southernwood, *Artemisia abrotanum*, is a tough, drought tolerant plant with very fine, gray-green foliage to

3' high. The fine textural qualities of this plant make it a favorite among designers who use herbs. I like it best in hot, dry areas where this tough plant thrives. Excellent when planted with other silver-gray Artemesias, penstemons, Oenothera. Try combining with bold textured plants like lamb's ear, sea kale.

Thyme

Thyme, *Thymus vulgaris*, is native to the western Mediterranean region. It is a small, many-branched perennial shrub. Thyme reaches a height of 12 inches and a width of 10-12 inches. 'Aureus' has leaves dappled with gold; 'Pink Chintz' and 'Peter Davis' outstanding selections. For longevity in the landscape allow fall leaves to blow in among the plants to protect the persistent foliage from desiccating winter winds. Great combined with the native pussytoes as an ornamental groundcover.



Gardening With Prairie Plants

- Evoke a sense of place with prairie landscapes. Instead of trying to imitate other places and import other traditions and styles, why not celebrate the intrinsic beauty of Nebraska in our cultivated landscapes. From the eastern woodlands and panhandle pinelands, to the tallgrass prairie and sandhills, you can develop a Nebraska style landscape. The best model for creating a prairie garden is a local prairie remnant, although unplowed prairies are now extremely rare. A prairie garden is simply a portrait of the vast prairie landscape.
- Prairie gardens benefit wildlife that depends on grassland habitats. Prairie plants provide the food, shelter and nesting cover for songbirds, beneficial insects and other critters that conventional landscapes cannot.
- A prairie landscape is ecologically sound. An established prairie landscape does not need watering, weekly mowing, herbicides, insecticides, or fungicides. If you continue to water after plants are established, the plants that survive will be those that require extra water, and you are stuck watering forever. Or you have to let them die and start all over, because the plants that “belong” on your site, the ones that can live on rainfall, rotted because they got too wet or were outcompeted by more water tolerant ones. In

- the Great Plains, especially during a drought year, a watering every month or so may be necessary to keep your garden from going dormant. If you do not water, and your garden does go dormant, it is okay, nothing is likely to die.
- A prairie landscape will provide erosion control. The roots of grasses and forbs arrange themselves in layers so that every cubic inch of soil is exploited for moisture and nutrients. A well developed sod layer, coupled with a myriad of thin grass stems, lets rain soak in and allows almost no runoff.
 - Lowland prairie landscapes will help clean our water supply. Deep rooted prairie plants also have extensive surface roots that act as a filter, absorbing potentially harmful nutrients from the water as it moves down the soil profile or as surface water along watersheds.
 - A prairie landscape around your home is a great learning experience. A natural prairie will attract songbirds, butterflies, toads, voles, and a host of other small animals. What a wonderful way to educate your children, by observing the changes throughout the seasons, you will learn and appreciate how they contribute to making all of nature work together.
 - Prairie plants are adapted to cope with Great Plains weather extremes. Specific prairie plants are able to withstand drought, wet, heat, cold, wind and hail, not to mention wide temperature fluctuations.
 - Specific prairie plants will adapt to various soil types and topography. In prairie gardening, the plants need to match the site. When deciding which plants to use, the key is to figure out where your soil is clay, loam, sand, gravel, rocky, wet, mesic or dry, and to gather together a mixture of plants adapted to those sites. In traditional gardening, we never worried about matching the plants to the habitat. We just stuck it in the ground and gave it lots of TLC.
 - Using and growing prairie plants will benefit the local economy. Opportunities exist for growers and producers of locally native seed and plant plugs for conservation plantings, roadsides, land reclamation, wholesale nurseries and landscape contractors.



Tallgrass Prairie Garden

A tallgrass prairie garden, neither too wet or not too dry, can reach 5-6' high and is typically used in larger areas or as a backdrop planting. Big bluestem and indiangrass should always be present in

this garden, along with some switchgrass. To prevent lodging or floppy stems, avoid shady conditions and only water during times of drought. These warm season grasses take awhile to green up in the spring so plant cool season grasses like Canada wildrye (*Elymus canadensis*) or silky wildrye (*Elymus villosus*) or a native sedge, like fescue sedge (*Carex bicknellii*) or prairie sedge (*Carex brevior*). These tufted grasses are green as soon as temperatures rise above freezing, competing for space with cool-season weeds like henbit and dandelions. If possible enrich the soil for your tall grass prairie garden by incorporating a few inches of compost.

- These sunny, mesic prairies are on rolling ground, where lowland prairie species are found in swales, tolerating periodic flooding and drought. These plants are always ready to adjust to wetter or drier conditions, i.e. many can tolerate overwatering and drought.
- Mat-forming ground covers: bloom in early spring, cover the soil, compete with spring weeds; tolerate shading from tall grasses in summer. My favorites include pussytoes (*Antennaria neglecta*) for dry sites, wild strawberry (*Fragaria virginiana*), bracted spiderwort (*Tradescantia bracteata*) and meadow anemone (*Anemone canadensis*) for moist sites.

They spread so let them fight it out between clumps of grasses.

- Spring flowers such as Wild Columbine (*Aquilegia canadensis*), Golden Alexander's (*Zizia aurea*), Prairie Phlox (*Phlox pilosa*) prefer moist sites.
- Summer/Fall favorites for dry tallgrass prairie site: White Wild Indigo (*Baptisia lactea*), Pale Purple Coneflower (*Echinacea pallida*), Ohio Spiderwort (*Tradescantia ohioensis*), Lance-Leaf Coreopsis (*Coreopsis lanceolata*), Winecups (*Callirhoe involucrata*), Prairie Coneflower (*Ratibida pinnata*), Wild Bergamot (*Monarda fistulosa*), Rattlesnake Master (*Eryngium yuccifolium*), Butterfly Milkweed (*Asclepias tuberosa*), Leadplant (*Amorpha canescens*), Dotted Gayfeather (*Liatris punctata*), Showy Goldenrod (*Solidago speciosa*), Roundheaded Lespedeza (*Lespedeza capitata*), smooth aster (*Aster laevis*)
- Summer/Fall for irrigated, tallgrass prairie sites: Queen of the Meadow (*Filipendula venusta*), Culver's root (*Veronicastrum virginicum*), Swamp Milkweed (*Asclepias incarnata*), Thickspike Gayfeather (*Liatris pycnostachya*), Joe-Pye Weed (*Eupatorium purpureum*), New England Aster (*Aster novi-angliae*), Elm-Leaf Goldenrod

(*Solidago ulmifolia*), Helen's Flower (*Helenium autumnale*)



Dryland Prairie Garden

Upland prairies are always well-drained and are the driest prairies in this area. Upland prairie plants are usually knee-high or less. This garden should always have a base planting of little bluestem (*Schizachrium scoparium*), sideoats grama (*Bouteloua curtipendula*), prairie dropseed (*Sporobolus heterolepis*) with an understory of blue grama (*Bouteloua gracilis*). Cool-season grasses, such as needlegrass and prairie junegrass should also be considered. When planning a border using plants native to dryland or rocky soils it is essential to improve the drainage of your site by raising the soil above the original grade. I use ½ topsoil or other organic soil and ½ gritty mix of gravel and sand.

- I use a light layer of gravel mulch on my dryland garden for topdressing: to provide a nice, uniform cover; xeric plants like to reseed in this mulch; weeding is easy by cutting the young weeds with a hoe just under the mulch. Wood chips hold too much moisture for these plants and they can crown rot.

- Early spring blooming gems include: Pasque Flower (*Pulsatilla patens*), Gumbo Lily (*Oenothera caespitosa*), Prairie Smoke (*Geum triflorum*), Pussytoes (*Antennaria neglecta*), Narrow-leaf Puccoon (*Lithospermum incisum*), Fremont's Clematis (*Clematis fremontii*), Ground Plum (*Astragalus crassicarpos*) and Prairie Ragwort (*Senecio plattensis*)
- Mid spring to early summer beauties include: Dwarf Blue Indigo (*Baptisia minor*), Evening Primrose (*Oenothera missouriensis*), Butterfly Milkweed (*Asclepias tuberosa*), Leadplant (*Amorpha canescens*), Prairie Skullcap (*Scutellaria resinosa*), Shell-leaf Penstemon (*Penstemon grandiflorus*), Pale Purple Coneflower (*Echinacea pallida*), Purple Prairie Clover (*Dalea purpurea*), Purple Poppy Mallow (*Callirhoe involucrata*).
- Late summer to fall: Prairie Coneflower (*Ratibida columnifera*) Aromatic Aster (*Aster oblongifolius*), Fendler's Aster (*Aster fendleri*), Showy Goldenrod (*Solidago speciosa*), Dotted Gayfeather (*Liatris punctata*)

Weedy Natives to Watch Out For

The following list of aggressive wildflowers can be appropriate for garden use if they are maintained as a single mass planting, surrounded by a mowed surface or planted in a bed dominated by grasses. I've grown all of

the following plants and some take advantage and seed into open spaces and others spread even when given intense competition.

- Maximilian Sunflower, Sawtooth Sunflower, Jerusalem Artichoke, False Sunflower (*Heliopsis helianthoides*), Cup Plant (*Silphium perfoliatum*), Meadow Anemone (*Anemone canadensis*), Canada Goldenrod (*Solidago canadensis*), New England Aster (*Aster novae angliae*), Ironweed (*Vernonia fasciculata*)

Pioneer Prairie Forbs For Re-Seeding

These wildflowers are nice additions to the prairie garden and although they are short-lived (1-3 years) they should still be included in your design. These beauties perpetuate in the garden by reseeding themselves. You can gather seed and sow it where you want it or let them seed out on their own and the garden becomes unpredictable, just like a real prairie. The following plants are all dryland species and are best sited in well-drained soils.

- Combine Brown-Eyed Susan (*Rudbeckia triloba*) and Plains coreopsis (*Coreopsis tinctoria* with Sand Lovegrass (*Eragrostis trichoides*)
- Try Wild Larkspur (*Delphinium virescens*) with Lance-leaf Coreopsis (*Coreopsis grandiflora*) and wild petunia (*Ruellia humilis*).
- Plant Prairie Junegrass (*Koeleria pyramidata*) with Prairie Ragwort

(*Senecio plattensis*) and Pale Penstemon, (*Penstemon albidus*)

- Combine Shell-leaf Penstemon (*Penstemon grandiflorus*) with Whorled Milkweed (*Asclepias verticillata*)
- A great combination for Western Nebraska includes Western Wallflower (*Erysimum umbellatum*), Narrowleaf Puccoon (*Lithospermum incisum*) and Pasque Flower (*Pulsatilla patens*)

Native Grasses for the Garden

- **Tallgrass**

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; provide moisture retentive soils for best results; they will reseed.

Lovegrass, Sand (*Eragrostis tricooides*)

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

Switchgrass (*Panicum virgatum*) A

most formal, native grass, standing up

through winter, & giving true meaning to "ornamental" grass. Provide competition as this grass can spread by seed and rhizomes.

Prairie Cordgrass (*Spartina pectinata*)

Use in low areas for erosion and weed control. A beautiful colony-forming grass that needs space.

***Canada Wildrye (*Elymus canadensis*)**

This has showy seed-heads with long bristle-like awns (reminiscent of barley). Can seed aggressively so provide competition.

- **Midgrass**

Junegrass, Prairie (*Koeleria

***pyramidata*)** dryland native, cool season bunch grass with gray-green leaves; blooms early June with narrow, erect inflorescence; needs well-drained, dry soils; can be short-lived in heavy soils but will reseed making them ideal for naturalizing; 18" high.

***Porcupine Grass (*Stipa spartea*)** a

cool-season native to dry, upland prairies; sharp-pointed seeds with very long, graceful awns; can be short-lived in heavy soils but will reseed; 2-3' high.

Gramma, 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.

Gramma, 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.

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.

Plains Muhly (*Muhlenbergia cuspidata*)

Tufted fine-textured grass with wiry stems and slender; nice when combined with little bluestem.

Grasses/Sedges for Shade



***Bottlebrush Grass (*Hystrix patula*)**

cool season bunch grass with shiny, green foliage to 2' topped by bottle-brush like seed heads in June to 3'; self sows but easily managed when allowed to weave between perennials; grows well in dry shade too; best in informal settings.

***Silky Wildrye (*Elymus villosus*)** Showy seedheads and grows in dry to medium soils in shaded woods and thickets.

***Bristleleaf Sedge (*Carex eburnea*)** Symmetrical clumps of soft green needle-like foliage. 6" high.

***Long-beaked Sedge (*Carex sprengelii*)** Long, bright green leaves fountain from a clump.

***Rosy Sedge, (*Carex rosea*)** Star-like seed clusters provide late spring accent. Grows a foot tall, the clumps of deep green leaves look great planted one foot on center in small groups, or when mixed with low growing woodland wildflowers.

***Palm Sedge (*Carex muskingumensis*)** This attractive sedge is very leafy, radiating out from the stems to resemble palm fronds. Highly rated. Grows to 2' h.

***Cattail Sedge (*Carex squarrosa*)** Narrow grass-like up to 2' in height. The showy seedheads are thimble-shaped. Due to its shade tolerance, it is also useful in wooded areas but may require additional water during drought.

***Oak Sedge (*Carex albicans*)** Dense tufts of dark green slender leaves make it a choice for borders & filling space among small perennials.

*Denotes cool-season grass

A Few Dryland Wildflowers for Nebraska Gardens

Aster species The exciting dryland natives Fendler's aster, *A. fendleri* and aromatic aster 'October Skies' (*Aster oblongifolius*) are short fall blooming

asters, lavender flowers with yellow centers; Smooth aster, *A. laevis* has glaucous pest free foliage!

Black-eyed Susan (*Rudbeckia species*) showy yellow daisy-like flowers with black center cones in summer; native *R. hirta* is a 2' annual that will reseed itself; *R. missouriensis* a 18" high perennial with fuzzy leaves, most drought tolerant; easy to grow and very adaptable

Compass Plant (*Silphium laciniatum*) robust, oak-like leaves on this long-lived classic; sends up a 4-7' flower stalk with many bright yellow sunflowers in fall; best planted with the prairie sky behind.

Coneflower, Narrowleaf (*Echinacea angustifolia*) narrow, rough textured foliage; pink to creamy white flowers with drooping petals in late spring; blooms 2-3 weeks earlier than 'Magnus'; drought tolerant

Coneflower, Pale (*Echinacea pallida*) very narrow, rough textured foliage; pink to creamy white flowers with wispy, drooping petals in late spring; very drought tolerant; western Nebraska native.

Coreopsis, Lance-leaf (*Coreopsis lanceolata*)- easy to grow, hardy perennials for hot, sunny border; grows best in well-drained soil; golden yellow daisies in summer; drought tolerant; cut back hard after flowering for new flush.

Gayfeather or Liatris- dotted gayfeather, *Liatris punctata* has lavender spikes, blooms in

September; *L. aspera* or rough gayfeather has lavender buttons along stems; drought tolerant and well-drained soils.

Goldenrod (*Solidago* species)- showy golden-yellow plumes in late summer to fall; Missouri goldenrod blooms in July-August, 2' h; Showy goldenrod is a 2-4' native; botanically, cannot cause hay fever.

Indigo, Dwarf Blue (*Baptisia minor*) gray-green usually 3-parted leaves with spikes of pea-like, rich blue flowers in spring; 2-3' high; full sun, deep soils; slow to establish but will live many years.

Indigo, White Wild (*Baptisia lactea*) stately 3-4' native with showy spikes of snow-white flowers in spring followed by attractive seed pods; tough, drought tolerant for full sun;



Leadplant, Dwarf (*Amorpha nana*) this slow growing cousin of leadplant takes three years to reach maturity; worth the wait with loads of pink spikes in late spring with a nice fragrance; 1-3' high.

Leadplant (*Amorpha canescens*)- native shrubby plant with small gray-white leaves forming bushy plants; topped with rich blue-purple flower spikes in early summer; very drought tolerant to 4' tall; prune hard in early spring.

Milkweed, Butterfly (*Asclepias tuberosa*) vibrant orange flowers top 2' tall plants in late spring; ornamental seed pods; plant in late spring and water sparingly to establish; needs good drainage

New Jersey Tea (*Ceanothos americanus*)- Handsome, durable shrub with clean foliage and abundant clusters of white flowers in late spring; slow to establish but worth the wait; limit competition from aggressive plants; dried leaves make an excellent prairie tea.

Poppy Mallow, Purple (*Callirhoe involucrata*)- low growing cut-leaf native to 12" tall and 4' wide; dies back to crown each year; bright purple cup-shaped flowers all summer; easy to grow and drought tolerant.

Prairie Coneflower, Roundheaded (*Ratibida pinnata*) elegant deep yellow, drooping petals surrounding a dark brown cone-like center; *R. pinnata* to 4-5' and somewhat of a nuisance seeder; *R. columnifera* is a more compact 2' high plant that is short-lived but will perpetuate if allowed to reseed; full sun.

Primrose, Missouri (*Oenothera macrocarpa*)- lance-shaped silvery leaves on sprawling plants to 2' wide; large light yellow flowers in summer;

large, winged seed capsules; tough, carefree plant; 'Comanche Campfire' was selected for its silvery foliage and reddish stems.

Pasque Flower (*Pulsatilla species*) western native with silky hairy leaves; delicate cup-shaped flowers in early spring followed by feathery seed heads; native has lavender flowers; need well-drained, dry soils.

Prairie Clover, Purple (*Dalea purpurea*) erect prairie plant with bright purple cylindrical heads atop thin, stiff stems in summer; fernlike foliage; 'Stephanie' nice compact selection.

Prairie Smoke (*Geum triflorum*) native to the Dakotas; attractive dark green, deeply lobed foliage forms 12" mounds; small, nodding pink flowers in early spring followed by feathery seed heads; wet or dry.

Prairie Ragwort (*Senecio plattensis*) flat-topped clusters of inch-wide heads, in rich, deep yellow in spring; short-lived but will seed around original plants to form colonies; dry, well-drained soils; 18"

Penstemon, Shell-leaf (*Penstemon grandiflora*)- beautiful late spring blooming perennials with erect flower spikes to 3'; tubular pink, maroon, white or purple flowers and showy seed heads; allow to reseed to perpetuate in the garden; needs sunny well-drained, dry soils; 'Prairie Snow' nice white.

Penstemon, Cobea (*Penstemon cobea*) beautiful summer blooming

perennials with erect flower spikes; large, tubular flowers in shades of lavender, pink and rose; showy seed heads; allow to reseed to perpetuate in the garden; needs sunny well-drained, dry soils.

Rattlesnake Master (*Eryngium yuccifolium*)- impressive gray-green, yucca-like foliage to 2'; flower stalks to 3', topped with honey-scented 1/2" white balls in summer; best with grasses.

Sage, Pitcher (*Salvia azurea*) slender stalks reach 4' in late summer; topped with clusters of azure-blue flowers; pinch in late spring to early summer for compact habit; very drought tolerant but rather lanky.



Spiderwort, Dwarf (*Tradescantia tharpaii*) narrow, hairy leaves emerge early spring to 12"; pastel flowers of deep pink to purple cover plants in May; early summer dormancy to reappear in fall; the prairie spiderwort, *Tradescantia ohioensis* is a lovely lavender colored native to 2' high for dry, sunny sites.



Wild Petunia (*Ruellia humilis*) small petunia-like lavender flowers on 1-2' native; long blooming season.

Wild Senna (*Senna hebecarpa*) fine textured leaves on 4-6' woody stems, topped with yellow pea-like flowers in summer, each with attractive black anthers; easy to grow in full sun; adaptable.

Wild Bee Balm (*Monarda fistulosa*) aromatic mint-like foliage; upright bushy plants to 4-5' tall; topped with 2" lavender-pink flower clusters in August; drought tolerant.

Woodland Wildflowers for Dense Shade

Woodland Phlox (*Phlox divaricata*)
Solomon's Seal (*Polygonatum biflorum*)
False Solomon's Seal (*Smilacina stellata*)
Mayapple (*Podophyllum peltatum*)
Sweet Cicely (*Osmorhiza claytoni*)
Dog's Tooth Violet (*Erythronium albidum*)
Bloodroot (*Sanguinaria canadensis*)
Jack-in-the-Pulpit (*Arisaema triphyllum*)
Harebell (*Campanula rotundifolia*)

Wildflowers for Part Shade

Prairie Phlox (*Phlox pilosa*)
Ohio Spiderwort (*Tradescantia ohioensis*)
Bracted Spiderwort (*Tradescantia bracteata*)
Wild Columbine (*Aquilegia canadensis*)
Prairie Alumroot (*Heuchera richardsonii*)
Culver's Root (*Veronicastrum virginicum*)
Smooth Aster (*Aster laevis*)
Purple Meadow Rue (*Thalictrum dasycarpum*)
Obedience Plant (*Physostegia virginiana*)
Golden Alexander (*Zizia aurea*)
Turtlehead (*Chelone glabra*)
Wild Geranium (*Geranium maculatum*)
Bradbury's beebalm (*Monarda bradburiana*)
New Jersey Tea (*Ceanothos americanus*)
Bottle Gentian (*Gentiana andrewsii*)



Leadplant—A Garden-worthy Prairie Pioneer

One of the most beautiful wildflowers in the entire Great Plains region, in my opinion, is leadplant. *Amorpha canescens* has been described as “a rather ordinary looking small shrub with an attractive bloom, but otherwise with no particularly outstanding features.” (Missouri Botanical Garden) I agree that it’s not the most graceful plant when it’s young, but with age it develops into an attractive small bush. It behaves like an herbaceous perennial that dies back to the ground most years, but as it matures it becomes more like a small shrub with stems that are woody at the base. Pruning it back to a foot high in early spring helps maintain a tidy appearance and encourages fresh new growth and abundant flowers.

By late spring the silvery leaves and flower buds catch the eye, giving the plant its “lead” gray color. By July the bush is topped with slender spike-like clusters of bluish-purple flowers, each dusted with gold anthers. The flowers only last about three weeks, but the slender seed pods, which remain on the tips of branches, add interest well into the fall season.

It grows in a wide range of soil conditions, but avoid planting it in wet clays and in very dry, sandy soils. Leadplant takes several years to reach maturity, but it is well worth the wait. Grow leadplant in sunny well-drained soil in a rock garden, butterfly garden, or plant it with short prairie grasses to form a prairie meadow and to help hide its

bare ankles from view. One of my favorite prairie-style plant combinations is leadplant with pasque flower, prairie smoke, prairie dropseed, butterfly milkweed and shell-leaf penstemon.



Not only is it rugged and beautiful, it also has a fascinating history and makes a great conversation piece. The common name refers to the belief that the plant indicated a presence of lead in the soil. The leaves were dried and used for tea by American Indian tribes and prairie pioneers. Leadplant makes a wonderful, orange-colored prairie tea that rivals any traditional tea, whether hot or iced. The Omaha-Ponca called it “buffalo bellow plant,” because when it was in flower it meant the buffalo would soon be coming into rut, bulls bellowing on the prairie. Those sturdy pioneers that plowed and broke the virgin prairie called it “devil’s shoestrings” in reference to the extensive, stout roots that snapped like a thick leather shoestring when they were cut by the plow.

Leadplant was named the 1999 Perennial of the Year by the GreatPlants® for the Great Plains program. For more information about the program and a complete listing of recommended plants, visit arboretum.unl.edu/greatplants.



Native Fruiting Trees & Shrubs for Wildlife

Note: Nearly all trees and shrubs are beneficial to birds by providing food or shelter. The following plants have been selected specifically as a food source.

Select a variety of plants and focus on landscape plantings that provide the following:

- Fruiting trees and shrubs serve as important food source for a variety of mammals and birds
- Low branching trees and shrubs that form thickets provide shelter, excellent nesting habitat and escape from predators.
- Strive to develop vertical layers in the landscape to include overstory trees, intermediate trees and large shrubs as well as woodland and grassland habitats. The structural

diversity of the landscape is what makes habitat and contributes to a wider variety of avian species.

- Aggressive thickets can be kept in check by confining in a planting bed and surrounding with mowed turf or prairie grass or through competition by grouping them next to each other.

Trees for Wildlife

Cedar, Eastern Red, *Juniperus virginiana*

Only the female plant produces the blue, berrylike cones in early fall through winter. At least 54 species that are known to eat the fruit, including the cedar waxwing, brown thrasher, and gray catbird. Also a great nest site for songbirds.

Pine, Limber & Ponderosa

Nebraska only has 2 native Pine species and no native spruce or fir species. There are legitimate choices for the landscape that are native to neighboring states and higher latitudes, including rocky mountain douglasfir, blue spruce, white spruce, border pine, red pine, eastern white pine. Surprisingly pine needles provide food for a variety of moth and butterfly larvae.

Cherry, Black- *Prunus serotina*

A rapidly maturing native tree with fragrant white flowers in spring following by small red cherries that turn black in late summer. At least 47 species eat the fruit, including the eastern bluebird, red-breasted grosbeak, northern flicker. Excellent pollinator plant for early season bee species; larval host for eastern tiger swallowtail and viceroy.

Hackberry, Common- *Celtis occidentalis*

At least 24 species of birds consume the small purple fruits in early autumn. It is especially favored by the northern flicker, northern mockingbird and cardinal; larval host for tawny emperor, question mark and mourning cloak.

Hickory, Bitternut, *Carya cordiformis*

A relatively fast-growing hickory with bright yellow fall color and smooth bark. In spring, long flowering catkins dangle like tinsel. Edible nut. Best growth on deep, rich soils. Larval host for the luna moth, walnut sphinx.

Hickory, Shagbark, *Carya ovata*

Foliage turns bright yellow in fall, bark becomes shaggy after 20-30 years. Drought-tolerant and free of serious pests

in eastern Nebraska. Larval host for the luna moth, walnut sphinx.

Linden, American, *Tilia americana*

Fragrant pale yellow flowers in late spring, small nutlets with leafy wings and large dark green leaves. Good lawn or shade tree. Excellent nectar source and larval host for white admiral, eastern tiger swallowtail.



Oaks

Oaks provide valuable nut forage for a variety of vertebrate wildlife. No other plant genus supports more species of Lepidoptera than the oak. Oaks are noted for hosting myriad leaf miners, dagger moths, hairstreaks, inchworms and giant silk moths. Other insects and wildlife use oaks for shelter and nesting sites. Restoring large stands of oaks to suburbia would go along way toward shoring up the future of our nation's biodiversity. Native Nebraska oaks include bur, black, blackjack, chinkapin, dwarf chinkapin red and white.

Northern Pecan, *Carya illinoensis*

A fast growing tough shade tree that does well in Nebraska. Allow 15 years to produce a fruit crop, only 7 years for a grafted tree. Plant several for good pollination and subsequent fruit crop. A

favorite of the bluejay and a wide variety of rodents. Nebraska state champion in Brownville is over 80' high. Native to Illinois, south.

Walnut, Black, *Juglans nigra*

Dark green leaves with yellow fall color. Edible, oily nuts are an important food source for small mammals. Prefers moist, well-drained soil, rich and deep soil full sun. Larval host for a variety of butterflies and moths.

Intermediate Trees for Part Shade -- 15-35'

Birch, River, *Betula nigra*

Bark exfoliates in papery strips to reveal orange-brown inner bark; Prefers organic, well-drained soils. Preferably afternoon, shade. Native to southeastern Iowa.

Birch, Paper, *Betula papyrifera*

Black marks on white bark when mature. Wet, well-drained sandy or rocky loams in part, preferably afternoon, shade. Native to Niobrara valley. Native to the Niobrara valley.

Buckeye, Ohio, *Aesculus glabra* var. *arguta*

Very adaptable Midwest native. Interesting chartreuse flower panicles in spring followed by prickly seed pods in late summer. Starry foliage turns orange-red in fall. Prefers part shade. Native to Richardson CO.

Dogwood, Pagoda, *Cornus alternifolia*

Distinctive horizontal branching. Fragrant, yellow/white flowers in flattened cymes late spring followed by black fruits relished by songbirds. Prefers

organic, well-drained soils. 15-20.' Native to IA, MN, MO.

Hophornbeam, American, *Ostrya virginiana*

Catkin flowers in spring become hoplike fruits in late summer. Dark green leaves turn buttery yellow in fall. Grows in full sun to part shade in well-drained soil. Native to Missouri river valley up into Niobrara valley.



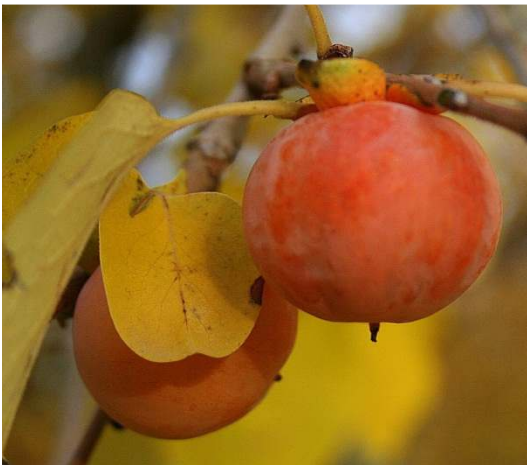
Juneberry, Downy, *Amelanchier arborea*

Beautiful snow white flowers bloom in spring and give way to edible, dark purple, blueberry-like fruits. Bluish-green leaves turn orange-red in fall. Full to part sun, tolerates a range of soil conditions. Native to SE NE.

Pawpaw- *Asimina triloba*

Larval host for the Zebra swallowtail butterfly; The largest native fruit, with up to one pound with a rich,

custard-strawberry, banana flavor. Best growth in rich, moist high organic soil, although tolerant of clay. Will also tolerate a lot of shade. Two trees are required for fruit set and fruiting usually occurs after 4-8 years. Pawpaw has twenty times as much iron, ten times as much calcium, and up to twenty times as much magnesium as do banana, apple or orange. They contain compounds which have been shown to inhibit mammalian solid tumor cells a billion times lower than the most common anti-tumor drug. Bark extract of pawpaw has shown excellent pesticidal and antifungal activity. 20' high, 15' wide; larval food source for the zebra swallowtail. Native to SE NE.



Persimmon- *Diospyros virginiana*

The persimmon is one of the most luscious and sweet fruits when it has truly ripened, usually after a frost or two. The bobwhite, eastern bluebird and many other species eat the fruit that can persist well into winter. Plant more than two trees for fruit set. 45' high, 35' wide; larval host of the luna moth. Native to NW Missouri.

Intermediate Trees for Full Sun

Blackgum, *Nyssa sylvatica*

The waxy leaves turn lustrous red in fall; beautiful horizontal branching patterns; silvery bark on young stems and dark alligator bark. Prefers deep, well-drained soil, resists drought and short term flooding. Heavy nectar producer for native bees and honey bees; excellent fruit for a number of birds. Native to KS, MO, IL

Crabapple, Prairie, *Malus ioensis*

This is the crabapple of the eastern prairie region in the upper Mississippi Valley. A handsome double-flowered variety is grown as an ornamental. Numerous species of birds, including bobwhites and pheasants, and squirrels, rabbits, and other mammals consume the fruit.

Oak, Dwarf Chinkapin- *Quercus prinoides*

This small oak, native to southeastern Nebraska, produces a bountiful crop of acorns every three years. It provides the preferred food of turkey, bobwhite quail, bluejay and rufous-sided towhee. Grows 15-20' h. Native to SE NE.

Large Shrubs for Full Sun

Buffaloberry- *Shepherdia argentea*

This is a much-branched native shrub that is armed with sharp twigs. The ¼" fruit becomes glossy and red-orange when ripe. Dried fruit can be used like raisins or made into jelly or pie. Two trees are required for fruit set. The selection 'Sakakawea' was noted for its excellent growth in trials. Prefers dry soils. 15' high, 10-15' wide. At least 12 birds enjoy its fruit, including the robin and sharp-tailed grouse.

Red Gooseberry- *Ribes x 'Red Jacket'*

The ½" fruits are deep reddish purple and quite tart.

Comanche Gooseberry- *Ribes uva-crispa 'Comanche'*

High yields of "sweet" juicy fruit.

Black Currant- *Ribes americanum*

Pleasant tasting currant, high in iron and other minerals.



Crandall Clove Currant- *Ribes odoratum 'Crandall'*

Selected for excellent, large fruit quality.

Red Lake Currant- *Ribes sativum 'Red Lake'*

Beautiful red berries in long, easy to pick clusters

Plum, Wild- *Prunus americana*

Profuse flowering and fruiting make this native shrub a favorite in edible landscapes. There is quite a bit of variation in fruit size and color, varying from yellow to red. There are selections available that offer a more tree-type growth and others that produce a higher fruit quality. The plum juice is high in pectin and when mixed with other fruits it causes them to jell. The fruit can be processed into jelly, jam, a spiced plum sauce or dried for a trail mix. 12-15' high,

12-15' wide; early season host for many pollinators; larval host for tiger swallowtail;

Plum, Chickasaw- *Prunus angustifolia*

Profuse flowering and fruiting make this southern Great Plains shrub a nice alternative to wild plum. This species offers a more tree-type growth and doesn't sucker. Can grow to 15' or more. Native to KS, OK, MO.

Rose Hips- *Rosa sp.*

Rose fruits, called hips, are valued for their high content of vitamin C and for their flavor. Hardy shrub roses and wild roses provide excellent nesting cover and food to at least 20 species of songbirds.

Sandcherry, Western- *Prunus besseyi*

A suckering, spreading 4-6' high shrub native to northern and western Nebraska. It prefers a well-drained soil for longevity and will thrive in a sandy soil. It will not tolerate heavy clay and wet conditions. Cultivars have been selected for fruit quality with '**Black Beauty**' (small, black and sweet) and '**Hansen's**' (large, purple-black, flavorful). The large, bing-cherry sized fruit will bear heavy around every third year. It is eaten by the ring-necked pheasant and other birds.

Snowberry- *Symphoricarpos albus*

This thicket forming shrub is easy to grow in a variety of soils. Its berries ripen in early fall and persist into late fall. It is an important source of late season food for ring-neck pheasant, robin and cedar waxwing to name a few. Grows to 4-6' high and can be pruned back hard each spring.

Sumac, Staghorn- *Rhus* species

This native shrub has a dense

form when young and then opens up with age. At least 31 species are known to eat the colorful red fruits that persist into winter. They provide a great “emergency” food for winter; larval host for red-banded hairstreak.

Shrubs for Wet Soils



Buttonbush, *Cephalanthus occidentalis*

A favorite of bees; honey scented; important summer nectar source; waterfowl feast on seed heads in late fall. A native of lowland, swampy areas this large shrub can grow in a variety of soils and is also drought tolerant. Grows 12-15' high. Larval host for sphinx moths, tawny-edged skipper, among others.

Dogwood, Silky, *Cornus ammomum*

This dogwood thrives in moist areas and produces pale blue clusters of bitter but aromatic berries; high in food value to at least 18 species. Tolerates wet soils. 10' h, 8' w. Dogwoods are host plants for spring azure butterflies.

Elderberry- *Sambucus canadensis*

Well known native fruit plant used to make everything from pancake syrup to wine. Fast growing to 6-10' and easy to grow in any soil. Probably the highest iron content of any native fruit. Needs to be pruned every couple of years to force new canes otherwise the fruit production drops off. The variety 'Adams'

was selected for its heavy fruiting. It is known to attract at least 33 different species including the red-headed woodpecker, eastern bluebird and cardinal; the old stems provide overwintering sites for insects; fragrant white flowers attract many pollinators.

False Indigo, *Amorpha fruticosa*

Bushy, suckering plant can grow to 12' or more. Cut to ground every few years to rejuvenate; compound foliage looks like a small honeylocust tree; dark purple flowers.

Viburnum, Arrowwood, *Viburnum dentatum*

White flowers in spring give way to dark blue fruits in summer relished by song birds. Full to part sun in average, well-drained soil. Many outstanding cultivars. Plant more than one variety for cross pollination and more fruiting. Can grow from 6' to 12' depending on the cultivar; larval host for the spring azure.

Viburnum, Nannyberry, *Viburnum lentago*

Shrubs for Part Shade

Chokecherry- *Prunus virginiana*

A large native shrub often occurring in thickets. They are easily contained using a mower to keep the suckers confined to a certain area. The juicy fruit turns a deep red purple to black when ripe and are borne in long clusters. Once known as rumcherries because they were often added to rum and brandy. Surprisingly, they tolerate a lot of shade. Exceptional syrup, jelly and wine!

Bladdernut, *Staphylea trifoliata*

A native understory shrub that

suckers to form thickets. Early spring flowers are somewhat showy and unusual, emerging before the foliage; attractive foliage turns yellow in fall; inflated seed pods develop in summer and persist all winter; attractive bark with whitish striping; grows to around 8' high and wide.



Coralberry- *Symphoricarpos orbiculatus*

This deciduous, bushy dense shrub has small pinkish flowers in late summer, followed by round, deep rose-purple berries that persist through winter. At least 14 species eat the fruit, including the American robin. 3-5' h, 4-6' w.

Dogwood, Rough-Leaf, *Cornus drummondii*

Flowers enjoyed by bees; white clusters of berries in fall a favorite of songbirds. Reddish purple fall color. Easy to grow, but will sucker aggressively. Plant in confined space. Excellent thicket for shelter and nesting. 15' h, 12' w.

Hazelnut, American, *Corylus americana*

This easy to grow suckering shrub grows naturally along the woodland edge, seldom growing outside the canopy of larger trees. They tolerate full sun, but do best in part shade and shelter from strong

winds. Some years are copious fruit crops relished by a variety of critters. Can grow up to 10' high and wide.

Juneberry- *Amelanchier species*

The native juneberry or serviceberry can be a bush type or tree type with profuse fruiting. Ripening in June, the fruits are delicious. This is an important summer food for many songbirds. Easy to pick and prepare and this plant performs in sun or part shade. Look for selections of the **Saskatoon Serviceberry (*Amelanchier alnifolia*)** the 4' high '**Regent**' selected for large fruits. Serviceberries have 10 times more vitamin C than blueberries. The downy serviceberry, *A. arborea*, a native understory along the Missouri bluffs, attracts at least 19 different birds. All are excellent pollinator species, attracting many bee species in early spring; larval host for tiger swallowtail.

Spicebush, *Lindera benzoin*

An attractive shrub for part shade or full sun; early season flowers emerge before the foliage and attract a variety of bees; handsome foliage turns yellow in fall; beautiful cardinal red fruit in fall; larval host for the rare spicebush swallowtail butterfly. Grows up to 8' h, 6' wide. Native to MO, IA, IL.

Viburnum- blackhaw, American cranberrybush, linden

The blue to black or red fruits of viburnums are some of the best for attracting songbirds. They also provide excellent cover for nesting. Plant in groups for better fruit set. Native to KS, MO, IA, MN

Oaks for Nebraska & Surrounding Great Plains

Native Oaks of Nebraska

1. **Bur Oak**, *Quercus macrocarpa* -- Our most common native oak; big and majestic - tough and reliable; thick, corky bark helped it to withstand prairie fire; twigs can have very corky ridges; large, fat, fan-shaped leaves; named for large acorns with bur-like fringes; 50-70'x 50-70'.



2. **White Oak**, *Quercus alba* -- Native to E. GP and extreme southeast Nebraska; similar in stature to bur oak – majestic and inspiring; light gray, scaly bark; fewer acorns; good fall color; 55-65'x 55-60'.
3. **Chinkapin Oak**, *Quercus muehlenbergii*--Narrow, chestnut-like leaves; flaky, gray-yellowish bark with maturity; tolerates high pH soils; should be planted more; 40-60'x 30-50'.
4. **Dwarf Chinkapin Oak** - *Quercus prinoides*--Variable habit from shrubby to tree form; prolific acorn producer; can have nice yellow fall color; national champion grows near Salem Nebraska; 10-25'x 10-20'.
5. **Red Oak**, *Quercus rubra* --Very reliable native; rounded habit; 7-9 shallowly lobed leaves are dull-green in summer with nice red fall color; 50-60'x 45-55'.

6. **Black Oak**, *Quercus velutina*--Large growing native similar to red oak; leaves are glossy and dark-green above with velvety undersides; nice red-maroon fall color; should be planted more; 40-50'x 40-50'.
7. **Blackjack Oak**, *Quercus marilandica*-- Shorter and slower growing than most oaks with distinctive tri-lobed leaves; can take on a very natural look with age; tough and underutilized; good fall color; 30-40'x 25-35'

Regionally Native Oaks

8. **Cherrybark Oak**, *Quercus pagoda* -- Similar to red oak but with rough, scaly bark that can resemble black cherry when mature; prefers moist, fertile soils; can be fast growing; 40-60'x 35-50'.
9. **Chestnut Oak**, *Quercus montana (prinus)*--Bright green, chestnut-like leaf; prefers moist, fertile soils; distinctive ridged bark somewhat resembles an alligator's back when mature; 45-60'x 40-50'.



10. **Hills Oak**, *Quercus ellipsoidalis*-- Similar to pin oak but less prone to iron chlorosis; native to northern US; good red/maroon fall color; 40-50'x 35-45'.
11. **Nuttall's Oak**, *Quercus nuttallii*-- Similar to shumard oak; native to lower Mississippi drainage basin;

tolerates poorly drained soils; red fall color; 40-60'x 35-50'.

12. **Overcup Oak**, *Quercus lyrata*--Large bur oak-like leaves; acorns nearly covered by cap; 40-50'x 35-45'.
13. **Pin Oak**, *Quercus palustris*--Beautiful, tall, upright habit with descending lower branches; good fall color; heavy acorn producer; very prone to iron chlorosis and should only be planted on acidic soils (pH <7.0); 50-70'x 40-50'.
14. **Post Oak**, *Quercus stellata*--Tough, corky bark; medium rounded tree; distinctive, cruciform leaves; native into southern Iowa and eastern Kansas; 25-35'x 25-35'.
15. **Scarlet Oak** - *Quercus coccinea*-- Similar to pin oak; scarlet fall color; avoid high pH soils; 45-60'x 40-50'.
16. **Shingle Oak**, *Quercus imbricaria*-- Distinctive narrow, smooth-edged leaves that are held through winter; tan-yellow fall color; 40-50'x 35-45'.
17. **Shumard Oak**, *Quercus shumardii*-- Very similar to red oak in habit and leaf shape; good heat and drought tolerance; reliable red fall color; should be planted more; 40-50'x 40-50'.



18. **Swamp Chestnut Oak**, *Quercus michauxii*--Similar to chestnut oak; native to wetter soils of southeastern US; scaly-grayish bark similar to white oak; 40-50'x 40-50'.

19. **Swamp White Oak**, *Quercus bicolor*-- One of the most popular oaks for planting; attractive glossy leaves with silvery underside; good for wet or dry soils; can be chlorotic on high pH soils; 60'x 50'
20. **Texas Red (Buckley) Oak**, *Quercus buckleyi*--Related to shumard oak but leaves smaller and more glossy; native to southern Great Plains; very good drought tolerance; bright red fall color; 25-40'x 20-35'.
21. **Willow Oak**, *Quercus phellos*: Narrow willow-like leaves; pin-oak like habit and siting requirements; 20 year old trees in Falls City, Brownville and Fairbury; 45'x 40'.

Shrubby species for thicket growth, acorn production

22. **Bear Oak**, *Quercus ilicifolia*--Shrubby, multi-stem habit; native to northeastern US; leaves similar to red oak; slow grower; 10-20' x 10-20'.
23. **Gambel Oak** - *Quercus gambelii*-- Native to southern Rocky Mountains; variable multi-stem habit – can be very shrubby in dry, difficult locations and more tree-like on better sites; very drought tolerant; 15 year trees doing well in western and eastern NE; 15-25'x 10-20'
24. **Wavyleaf Oak** - *Quercus xundulata*--A naturally occurring hybrid of *Q. gambelii* and *Q. turbinella* from Rocky Mountains and SW US; semi-evergreen leaves; typically multi-stem and shrubby; a few trees planted in west and eastern NE, shows promise; 10-20'x 10-20'.

Exotic Oaks

25. **English Oak** - *Quercus robur* (I, W): Similar to white oak but with smaller, glossy-green leaves and

long, abundant acorns; habit can vary from round and spreading to upright; tough and reliable; 60'x 50'. Numerous cultivated varieties have been developed including columnar types (*Quercus robur* var. *fastigiata*) that stay very narrow; variety 'Salicifolia' has narrow leaves similar to shingle oak and is doing well in Waverly.

26. **Japanese Emperor (Daimyo) Oak** - *Quercus dentata* (I): Similar to *Q. mongolica*; large, thick, fuzzy leaves held through winter making it somewhat prone to ice damage when young; 25-40'x 20-40'.
27. **Liotung Oak** - *Quercus liaotungensis*: (I): Native to China and similar to Mongolian oak; large leaves; 30-40'x 30-40'.
28. **Mongolian Oak** - *Quercus mongolica* (I, W): Similar to Bur Oak in habit and adaptability though doesn't grow as large; chestnut-like leaves; performing well in N. Dakota; 40-50'x 34-45'.



29. **Sawtooth Oak** - *Quercus acutissima* (I): Fast growing oak from Asia; long, narrow leaves with sawtooth-like edges; upright growth when young; distinctive frilled acorn caps; 50-60'x 40-50'.

Oak Hybrids, Varieties & Cultivars

30. **Black-blackjack (Bush) Oak** - *Quercus x bushii* (*Q. marilandica* x *velutina*), N: Very similar to

blackjack oak; occurs naturally in southeast Nebraska; 20-30'x 20-30'.

31. **Bur-chinkapin (Deams) Oak** - *Quercus x deamii* (*Q. macrocarpa* x *muehlenbergii*), N: Occasionally found in southeast Nebraska; a nice specimen grows on the Peru State College campus; 40-60'x 40-50'.
32. **Burenglish Oak** - *Quercus macrocarpa* x *robur*: from the famous McDaniel Oak in Illinois; fast growing and adaptable.
33. **Bur-gambel Oak** - *Quercus macrocarpa* x *gambelii*: Great heat and drought tolerance makes it a good choice for western Great Plains; abundant acorns at a young age (4yrs); 25-40'x 25-45'.
34. **Schuette Oak** - *Quercus x schuettei* (*Q. bicolor* x *macrocarpa*): Vigorous habit; glossy, dark green leaves resist lace bugs; good acorn production; 50-60'x 50-60'.
35. **Bebbs Oak** - *Quercus x bebbiana* (*Q. alba* x *macrocarpa*): Great looking tree that is very hardy and a vigorous grower; good fall color on some trees; 50-60'x 50-60'.

English Oak Cultivars

- 'Clemons' (Heritage) Oak -- Bur-English Oak cross - *Quercus x macdanielii* (*Q. macrocarpa* x *robur*): Vigorous grower with abundant acorn production; glossy leaves resist mildew; 50-60'x 30-40'.
- 'Crimson Spire' Oak -- White-English cross - *Quercus x bimundorum* (*Quercus alba* x *robur*): Possesses a narrow-growing habit and red fall color; 40'x 15'.
- 'Regal Prince' (Ware) Oak -- Swamp white-columnar English - *Quercus x warei* (*Q. robur* var *fastigiata* x

bicolor): Regal Prince Oak has a very attractive, upright habit with glossy foliage.

Sargent Oak—chestnut-english oak-
Quercus prinus x robur: A well-known hybrid oak that dates back to the 1930's

Swamp white-English (Procera)

Oak-*Quercus bicolor x robur*: Tall, upright, vigorous habit; heavy acorn producer; offered by Oikos Tree Crops; 50-70'x 45-60'.

36. **Shingle-Pin** (Lefler Oak) - *Quercus x exacta* (*Q. imbricaria x palustris*): Seedlings produced from a tree in Lincoln are fast growing, upright and very attractive; shows promise for SE Nebraska; 40-60'x 40-50'.
37. **Red-pin Oak** - *Quercus x columnaris* (*Q. palustris x rubra*): Fairly common hybrid in nature and in nursery industry; many nice, large trees grow in Lincoln; avoid high pH soils; 50-60'x 40-50'.
38. **Saul's Oak**- *Quercus x saulii* (*Quercus prinus x alba*): a fast growing hybrid with abundant acorn crops; very adaptable.

Promising Oaks (need further testing)

39. **Chinese Cork Oak** - *Quercus variabilis*: Leaves and habit similar to sawtooth oak; corky bark; 40-60'x 35-55'.
40. **Downy Oak** - *Quercus pubescens*: Attractive small, leathery leaves that emerge pubescent, thus its common name; short, irregular habit; doing well in Waverly; 20-30'x 20-30'.
41. **Hungarian Oak** - *Quercus frainetto*: Native to Balkan Peninsula; white oak family; attractive glossy leaves

with silvery undersides; doing well in Waverly; 35-45'x 30-40'.

42. **Mohr (shin) Oak** - *Quercus mohriana*: Native to New Mexico, west Texas/Oklahoma; shrubby, multi-stem habit; distinctive leaves with silvery pubescent undersides; tolerates dry, alkaline soils; 15-25'x 10-20'.
43. **Oriental White Oak** - *Quercus aliena*: Little know oak from China; glossy, chestnut-like leaves; nice fall color; doing well in Waverly; 40-50'x 30-40'.
44. **Persian (Caucasian) Oak** - *Quercus macranthera*: Similar to downy oak; showing promise in Fort Collins, Colorado.
45. **Sessile (Durmast) Oak** - *Quercus petraea*: Native to Europe and similar to English oak; showing promise in Fort Collins, Colorado; 40-50'x 40-50'.
46. **Shrub Live Oak** - *Quercus turbinella* (**W**): Shrubby habit; semi-evergreen; best for western Great Plains; 15'x 15'.
47. **Southern Red Oak** - *Quercus falcata*: Somewhat similar to red oak but with distinctive turkey-foot like leaves that have wider lower lobes; maroon fall color; good on dry sites; does well in eastern Kansas; 30-40'x 30-40'.
48. **Water Oak** - *Quercus nigra*: Very distinctive tip-heavy leaves somewhat like blackjack oak; prefers moist, well-drained soils; 15 year old tree doing well outside of Lincoln. 30-40'x 30-40'.
49. **Turkey Oak** - *Quercus cerris* (**I**): Native to Europe and Asia Minor, including Turkey; leaves similar to white oak; tolerates alkaline soils; 40-60'x 40-50'.
50. **Valley Oak** - *Quercus lobata*: From central California; leaves and habit similar to white oak; showing promise in Fort Collins, Colorado; 30-40'x 30-40'.

Outstanding Ornamental Grasses

Ornamental grasses are key plants for the garden providing seasonal beauty with colors and textures only they can provide. Ornamental grasses are easy to grow, well adapted to the extremes of the Great Plains climate and offer a huge array of sizes, colors and flowering times. This presentation will highlight some of the best ornamental grasses for Nebraska.

- 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.
- 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 fescue 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. 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.
- 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 complimenting brightly colored perennial flowers. The autumn chill transforms grasses into an array of golds, russets, bronze, and burgundies. 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.
- 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. Ornamental grasses are easy to grow when provided a well-drained soil and sunny conditions.
- Cut grasses are ideal in fresh or dried arrangements—they offer a long vase life, vertical line, excellent filler material; seasonal beauty in both indoor and outdoor containers

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, Indiangrass, and switchgrass were once key components of the tall grass prairie and thankfully are now also becoming key components in today's urban prairies. Prairie grasses are an ornamental grass too.

Native Grasses of the Great Plains

Cool - Season Grasses

(grow quickly in early spring and bloom by late spring)

Wildrye, Canada (*Elymus Canadensis*)

Native along river banks, streams and open prairies; clump-forming 3-4' tall, flowering in mid-summer with gently nodding seed heads resemble cultivated rye; remain attractive all winter; tends to flop in heavy soil; tends to self sow making it desirable for naturalizing but can be a nuisance in small gardens. The **silky wildrye**, *Elymus villosus* will self sow readily in shady conditions; glossy foliage, reaching 2' high, topped with fine, rye-like seed heads.

Bottlebrush Grass (*Hystrix patula*)

Cool season native bunch grass with shiny, green foliage to 2' topped by bottle-brush like seed heads in June; grows to 3'; self sows but easily managed when allowed to weave

between perennials; grows well in part shade too; best in informal settings.



Junegrass, Prairie (*Koeleria pyramidata*)

Dryland, cool season, native bunch grass with gray-green leaves; blooms early June with narrow, erect inflorescence; needs well-drained, dry soils; short-lived but will reseed making them ideal for naturalizing. Dormant in summer.

Prairie Sedge (*Carex bicknellii*)

Forms dense clumps of grass-like foliage; prairie sedges native to dryland and wetland soils; combine with warm season grasses for early spring color and weed competition; durable, adaptable plants. *Carex brevior*, **fesque sedge** forms an attractive mound in early spring to combine with warm season grasses; *Carex vulpinoides*, **fox sedge** tolerates

moderate drought and is ideal in rain or water gardens.

Palm Sedge (*Carex muskingumensis*)

Many overlooked native grass-like plants in wide variety of 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! Palm sedge has radiating deep green leaves with attractive light brown seed heads. Surprisingly drought tolerant in light shade; does great as a marginal plant in pond gardens and streams.

Warm – Season Grasses

(emerge by mid spring and bloom by mid to late summer and fall)

Gramma, 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.

Gramma, Sideoats (*Bouteloua curtipendula*)

A very dependable native grass with flowering stalks that ascend above a mound of gray-green foliage in summer; oatlike seed heads held on one side of the stems, to 3' h; bronze-orange fall color; straw in winter; dry or moist soils, full sun; single plants are subtly attractive and broad drifts can be dramatic.

Bluestem, Little (*Schizachrium scoparium*)

Super native bunch grass with fine-textured bright green or light blue leaves from 2-4' tall in summer; the late summer flowers becoming silvery and

glow when backlit by the sun; foliage remains attractive through winter; avoid highly fertile soils, excessive moisture, or mulching or they will become lax and floppy. 'The Blues' has deep blue foliage; 'Blaze' russet-red in fall; 'Blue Heaven' a taller, true blue.



Dropseed, Prairie (*Sporobolus heterolepis*)

Native bunch grass with thin, ribbon-like leaves form 2' mounds; delicate seed heads appear in late summer and especially attractive when back lit; strongly fragrant seed heads scented; foliage can turn deep orange to light copper; takes a few years to grow into maturity, but likes it dry and never needs dividing. This is one of the best grasses for large scale groundcover.

Lovegrass, Sand (*Eragrostis tricooides*)

Native to sandy soils with flowering stems to 4' h; masses of

airy, fine textured, pink tinted seed heads in August; self sows manageably in loam and readily in sand but easily managed; forms bright green mounds of foliage in early spring; will be floppy in shady conditions or excess water. Extremely drought tolerant.



Bluestem, Sand (*Andropogon hallii*)

Very attractive blue basal foliage with rich red-purple tones in fall; upright flowering stalks in late summer have yellow stem sections; similar to big bluestem but more suited for very dry sites; performs best in full sun; thrives in droughty, windswept sites; very dramatic planted in mass. Silver Sunrise® developed by the GreatPlants for the Great Plains program.

Buestem, 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. Single plants are subtly attractive and broad drifts can be dramatic as a backdrop or screen. 'Pawnee' is a seed cultivar of central NE.

Indiangrass (*Sorghastrum nutans*)

One of the most beautiful prairie grasses in fall. A clump former with blue-green leaves and golden, feathery seed heads held above leaves in fall to 6' high; It is very adaptable and can grow in a variety of sites; moderately drought tolerant; Best grown in full sun; They will self-sow so this is a great one for meadow plantings.

Switchgrass (*Panicum virgatum*)

Dependable native; loose, airy seed panicles in late summer into fall; leaves turn rich yellow in fall to straw winter color. Avoid shade and top watering to prevent lax, floppy stems. Cut back to the ground in spring. 'Shenandoah' -tight clump to 4' with red leaf tones in summer. 'Dallas Blues' outstanding 6-7' more upright plumes in fall 'HeavyMetal' nice blue-gray foliage 'Northwind' is the best for strict, upright habit;

Prairie Cordgrass (*Spartina pectinata*)

Excellent 4-6' grass with compact, narrow seed heads, nice yellow fall color; aggressive rhizomes; confine to restricted areas or you'll regret it; difficult to cut back in spring; 'Aureomarginata' has yellow leaf margins. Ideal grown in large pots for pond plantings or a massed in low areas for storm water management.



Sea Oats, Northern (*Chasmanthium latifolium*)

Upright bunchgrass to 3-4' high with flattened spikelets topping the plants in summer; they start green then fade to a handsome bronze in winter; tendency to reseed heavily so plant in a confined space or scratch young seedlings out with a hoe; easy to grow in full sun or partial shade; tolerates dry shade very well.

Hardy Exotic Grasses

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' has white-edge leaves and 'Avalanche' has white center stripe; 'Strica' earliest to bloom, very upright; very well

behaved grass. Moderately drought tolerant.

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 moderately dry soils; best in dappled shade and combine nicely with hosta; great in container plantings too.

'Ice Dancer'- has cream white leaf margins to 12" high.

'The Beatles' makes a deep green mop for groundcover, only 6" high.

'Evergold' – bright yellow variegation to 12"

Hair Grass, Tufted (*Deschampsia caespitosa*)

The selection 'Northern Lights' has beautiful cream-variegated foliage on new growth and in cool weather; very fine, airy flower panicles appear in early summer; best in part-shade; 12-15" high.

Ribbon Grass (*Phalaris arundinacea* var. *picta*)

A popular favorite for years with creamy-white stripes on leaves to 18" high; cool season aggressive spreader; plant in confined space and part shade.

Quaking Grass (*Briza media*)

A 20" cool season grass with puffy oatlike seed heads rustling with the slightest breeze in spring; shear back by late summer for new flush of growth; durable and long-lived for full sun to part shade.

Fescue, Dwarf Blue (*Festuca glauca*)

Lovely powder blue foliage and dainty flower spikes in early summer; compact size makes it ideal as a border plant or for the rock garden; must have full sun and good drainage to perpetuate in the garden; 'Elijah Blue' holds its color well throughout the season; 12" high.

Oatgrass, Blue (*Helictotrichon sempervirens*)

A winter-hardy European native; clump-forming grass with intense blue leaves to 2'; delicate flower stalks appear in late spring; Prefers full sun and good air movement to resist any foliar rust; requires well-drained soil for long life; suffers in poorly drained, clay soils; outstanding silver-blue is unrivaled among grasses.



Miscanthus or Maiden Grass

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 reddish-purple fall color;

'Gold Bar' – heavy gold striping;

compact, upright habit 3-5' high;

'Morning Light' – white and green variegation; fine, narrow leaves; upright arching habit to 5' high.

'Strictus' -with yellow bands on the foliage;

'Gracillimus'- has reddish-pink seed heads; graceful arching habit

'Giganteus' -grows to 12' high!

'Variegata' – bright white and green variegation; strong arching habit; tolerates part-shade; grows to 6'.

'Zebrinus' – bright yellow bands on the foliage.

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.

Moor Grass 'Skyracer', *Molina*

arundinaceae

This beautiful grass is noted for its 2-3' gray-green basal leaves and 7-8' stiff, upright stems and open flower panicles in fall; prefers some moisture in heat of summer; striking accent.

Moor Grass, Autumn (*Sesleria autumnalis*)

This hardy European native forms basal clumps of yellow-green foliage to 12" high; blooms in mid-summer to 18 inches with narrow seed heads; full sun to part shade and moderately drought tolerant; great near a water feature.



Giant Sacaton (*Sporobolus wrightii*)

This southwestern native is also winter hardy to zone 4! Attractive waist high mounds of gray-green foliage by late summer; the feathery, branched seed heads rise to 6' in fall to create a great see-through affect; retains shape through winter with straw-colored leaves; moderately drought tolerant.

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.

Pennisetum, Chinese (*Pennisetum alopecuroides*)

Narrow-leaved bunch grass with foxtail-like silvery-white plumes in late summer; Green foliage mounds turn golden yellow in autumn and remain attractive all winter; typically 2-3' high; stunning in groups or masses; native to China.

Lyme Grass, Blue (*Leymus arenarius*)

Native to European coastal sand

dunes; impressive bright bluish foliage to 2'; spreads very aggressive in loose soils; best contained; tolerates dry soils.

Non-Hardy Exotic Grasses

Fountain Grass or Feathertop,

Pennisetum setaceum or *P. villosum*

All of the following selections make outstanding container plants or focal point for bedding plants; drought and heat tolerant; Purple fountain grass has purple-red stem, leaf and flower color; New varieties 'Karley Rose', 'Fireworks', 'Tall Tails' and 'Purple Majesty' highly ornamental; feathertop has showy white plumes.

Pink Muhly Grass, *Muhlenbergia*

capillaria

This southwestern native offers rich green glossy basal foliage topped by masses of delicately branched flower panicles in late summer and early fall; looks like pink clouds; extremely drought and heat tolerant; 'White Cloud' is a stunning white form; grows up to 3' high and stunning in container gardens.

Mexican Feather Grass, *Nassella* or *Stipa*

tenuissima

A cool season grass that is among the finest texture of any grass! A dense green fountain of hair-like leaves ending in silvery seed spikes by early summer. The plants becomes light straw-colored and remains attractive through winter. Usually not hardy but self-sows readily and easy to perpetuate in the garden.



The Pawpaw—North America’s Largest Native Edible Fruit

Edited from the entry on Pawpaws in *Wild Seasons: Gathering and Cooking Wild Plants of the Great Plains* by Kay Young. © 1993 by the University of Nebraska Press. Available wherever books are sold or from the University of Nebraska Press 800.526.2617 and on the web at nebraskapress.unl.edu.

The pawpaw is a native tree usually found growing in colonies and often among other, taller trees in extreme southeastern Nebraska. The edible fruits are sometimes compared to short, stubby bananas, but are thicker and more rounded. The skin of the ripe fruits is light green or yellow green; the flesh is custard-like. Pawpaws are easy to prepare: simply cut the fruits in half, then remove the seeds and scoop out the flesh with a spoon, being careful not to scrape in the greenish layer that lines the skin. The flesh should have a pleasant fragrance and be soft but not mushy.

(Cautions: underripe or overripe pawpaws can cause indigestion, abdominal cramps; seeds and the greenish layer are not edible; handling pawpaws causes some persons to develop a skin rash).

When I was in graduate school in Kentucky, I learned that the woods were full of them. When October came, I placed a note on the department bulletin board that read, “I would appreciate receiving pawpaws and will share the resulting baked goods,” and I signed my name. In a few days I became rich beyond my dreams- sacks of pawpaws, boxes of

pawpaws, a half-bushel of pawpaws. It was wonderful. I baked them and froze them, I made pawpaw cookies and pudding and ice cream and bread. My fellow students ate it all and gave me serious feedback. The consensus was that the bread was marvelous and that the rest were good, except the pudding, which they thought was a waste of good pawpaws that could have been made into bread. Here is the recipe for pawpaw bread. (It takes on a pale rosy tint as it bakes.



Pawpaw Bread

350 degree oven

2 cups all-purpose flour

1 teaspoon soda

½ teaspoon salt

½ cup margarine or butter

1 cup granulated sugar

2 eggs

1 cup mashed pawpaw pulp

½ cup nutmeats (hickories if you have them)

Grease a 9 x 5 x 3 – inch loaf pan with margarine or butter and set it aside.

Sift the flour, soda, and salt together onto a piece of waxed paper. With an electric mixer, cream the margarine or butter until fluffy. Gradually add the sugar and continue beating until thick and light. Add the eggs, one at a time, and beat well. Add about half of the dry ingredients and the remaining pulp, again stirring only enough to mix. Add the remaining dry ingredients and the remaining pawpaw pulp in the same way. Fold in the nutmeats. Bake for 1 hour or until the surface springs back when lightly touched at the center.

Remove from the oven and allow to cool for about 10 minutes, then loosen the sides with a table knife and turn the loaf out onto a plate. Cover with a cloth and allow it to cool completely.



The Shagbark Hickory—A Flavor unlike Any Other

Edited from the entry on Hickory nuts in *Wild Seasons: Gathering and Cooking Wild Plants of the Great Plains* by Kay Young. © 1993 by the University of Nebraska Press. Available wherever books are sold or from the University of Nebraska Press 800.526.2617 and on the web at nebraskapress.unl.edu.

The shagbark hickory is a tall native tree reaching a height of 60 or more feet. Their trunks are distinctive, with gray bark that separates into long strips. Often loosening from one or both ends, these strips give the trees a shaggy appearance. Nuts may be solitary or occur

in clusters of 2 or 3. Each is encased in a thick husk that splits into four quarters—often as soon as the nut falls from the tree.

Although the enjoyment of hickory nuts is mostly in the eating, a good share of it is in the gathering. There

is something about hiking through the trees and searching for the nuts that adds to the pleasure of eating the foods made from them.

The flavor of a hickory nut soon after it falls is not the same as after it has had time to cure. When ready to eat, the nutmeats should be crisp and flavorful—uncured nutmeats are pliable and lack flavor. To cure, shake the nuts out onto a screen or into a large open box. Because the shells are very hard, the nuts are best cracked with a hammer or nut-cracking machine; an ordinary nutcracker is not adequate.

Hickory nuts are versatile and taste wonderful in anything to which they are added. There is a unique flavor unlike any other, and some recipes such as persimmon pudding, are simply not the same when made with other nutmeats. They are good with baked squash or yams or added to salads, but perhaps hickory nuts are most loved for their use in cakes.

Hickory-Apple Cake

350 degree oven

1/3 cup flour

1 teaspoon baking powder

¼ teaspoon salt

1 egg

2/3 cup granulated sugar

1 teaspoon vanilla extract

1 cup peeled and chopped apple

½ cup hickory nutmeats

Grease an 8 x 8—inch square cake pan with margarine and set it aside.

Sift the flour, baking powder, and salt together onto a piece of waxed paper. Put the egg, sugar, and vanilla into a medium bowl and beat with an electric mixer until thick and creamy. To this add the chopped apple and nutmeats; stir well. Add the flour mixture and stir until all the ingredients are well mixed. Pour into the prepared pan and bake for 45 minutes or until the surface springs back when touched lightly in the center. No frosting is needed. Makes 9 to 12 servings.



GreatPlants™ for Curbside Gardens

The long linear strip of soil between the sidewalk and curb usually consists of a ragtag mixture of parched Kentucky bluegrass, a sea of dandelions and maybe a tangle of bindweed or puncture vine. These areas are not prime gardening spots, usually very dry, and compacted soils, heated by the nearby pavement, with seasonal loads of salt and sand. Indeed, they have been dubbed "hell strips" by garden writer Lauren Springer.

Most everyone has an inferno strip on their property, but this area is often ignored or cast aside as no place to showcase beautiful plants. With a plethora of beautiful plants from dryland prairies, foothills and mountains, rocky cliffs of the Mediterranean regions to the

harsh climate of northern Asia, the most diverse and beautiful curbside gardens can be created. There are many plants that are drought tolerant, but it's the plants that can take the heat that belong in curbside gardens. If you want a garden that doesn't require much water, is easy to care for, while adding curb appeal to your neighborhood, then look for the plant selections recommended by the GreatPlants® for the Great Plains program.

Hell-Strip Gardening 101

- Curbside gardening has unexpected pleasures in addition to the obvious rewards of transforming boring turf into a

beautiful planting. When you spend time bent over a shovel in this public spot, you tend to visit more with neighbors and passers-by. Swap plants, talk over weeds, and happily take compliments on the makeover.

- A cheerful garden planted along a sidewalk can add curb appeal to residential real estate, as color attracts the eye of potential buyers.
- Prairie grasses have developed strategies against drought and look elegant combined with xeric wildflowers and heat-loving culinary herbs native to the Mediterranean region.

Plant low grasses, such as

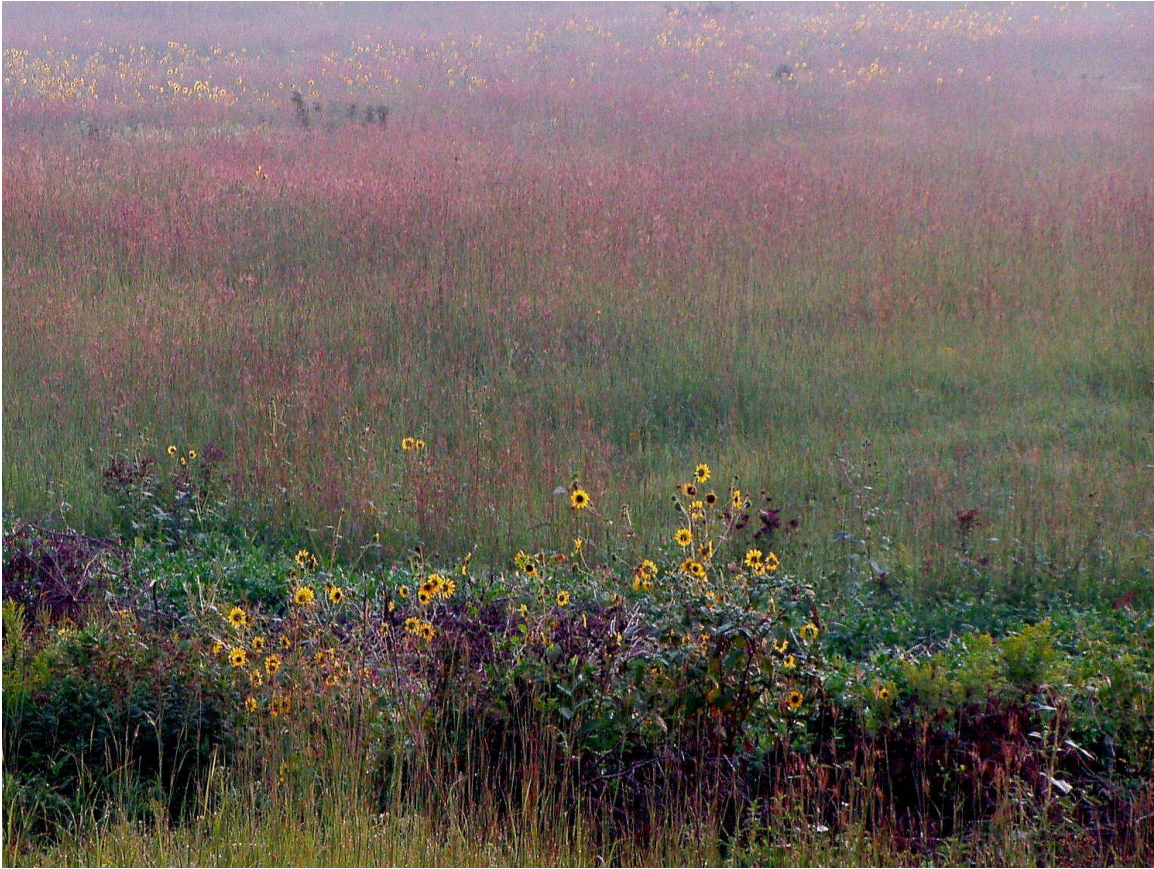
- blue grama grass (*Bouteloua gracilis*),
- sideoats grama (*Bouteloua curtipendula*),
- prairie dropseed (*Sporobolus heterolepis*),
- little bluestem (*Schizachyrium scoparium*)
- prairie junegrass (*Koeleria pyramidata*)

Some dependable plant combinations include:

- Fremont's clematis with creeping phlox and basket-of-gold
- 'Bluebird' aster & 'Eureka' gayfeather
- pasque flower with prairie smoke & dwarf spiderwort
- Shell-leaf penstemon & pale purple coneflower
- Missouri primrose & purple poppy mallow, dwarf blue indigo
- leadplant with butterfly milkweed & prairie dropseed

- upright prairie coneflower with rattlesnake master
- Amsonia with 'Husker Red' penstemon & black-eyed susan
- Aster- 'October Skies' with dotted gayfeather and little bluestem

- Combine hardy exotics for additional color and interest from spring to fall using tough plants, such as basket-of-gold, creeping phlox, Iberis, blue flax, yarrow, Salvia, catmint, Gaillardia, ballon flower, Artemesia, Sedum, hardy geranium, among many others.
- For information about these plants and for additional plant lists for hot, dry areas go to arboretum.unl.edu and click on the Plant Information page and the GreatPlants page.
- Spend some time choosing a groundcover for your strip, and get local recommendations on appropriate plants. Books on xeriscaping, or gardening with drought-tolerant plants, often contain extensive plant lists, by region and by category. Choose a variety of plants and remember "only the fittest survive."
- But there are steps you should take to avoid an unfavorable response from your neighbors. Become familiar with city and/or neighborhood regulations on gardening the strip. Neighborhood associations or gated communities may have highly restrictive covenants, such as a requirement for well-manicured lawns only. Make sure you're allowed to plant something there besides grass.



Prairie Plants Used on the Plains

The following is a list of some of the native wildflowers and grasses that have a rich history here on the Great Plains. These plants were not only beautiful but were also useful to the Native Americans and the prairie pioneers. Although the descriptions are brief you can easily see that most every plant was used for ceremony, food, shelter or for play.

Townsendia exscapa, **Easter Daisy**- decorated pioneer churches at Easter. "April came with tight little clumps of Easter daisies on the greening hillsides, and finally the new sodhouse on the homestead was

begun" -Mari Sandoz, "Sandhills Sundays"

Pulsatilla patens, **Pasque Flower**-: often called "twin flower" or "old man of the prairie" because flowers usually appear in pairs and the seed heads resemble the gray hair of an elder person.

Astragalus crassicarpos, **Ground Plum** - "buffalo food" -the little pea-like fruits were used as a seasonal indicator for corn planting schedule. Fruits enjoyed as snack food.

Fragaria virginiana, **Wild Strawberry**- the month of June was called "moon when strawberries are

ripe." Luxuriated in them in their season.

Anemone cylindrical, **Candle**

Anemone:- called "playing card medicine"; the cylindrical seed heads were rubbed between hands for good luck.



Yucca glauca, **Soapweed**- root soaked in water to make sudsy soap. Bound with sinew to make fire drill. Fire source in treeless prairie. Leaves pounded to reveal fibers that were used as thread and tip as needle; immature flower spike boiled and eaten like asparagus; flower petals eaten fresh.

Tradescantia, **Spiderwort**- species: mucilaginous juice resemble spider's silken strands. Local names include "snotweed" and "cow-slobbers"

Baptisia minor, **Dwarf Blue Indigo**- called "Rattle-pod" and used by children in ceremonial dance.

Amorpha canescens, **Leadplant**- "buffalo bellow plant" because it was the dominant prairie flower during rutting season; or "prairie tea" by Lakotas; powdered dried leaves mixed with buffalo fat for pipe tobacco

Asclepias syriaca, **Common**

Milkweed- ate boiled young shoots; immature fruit; flower clusters; called cabbage "white mans milkweed;"

Callirhoe involucrate, **Purple Poppy**

Mallow- root dug and stored; leaves chewed for pleasant flavor and added to stews for thickening.

Ceanothos americana, **New Jersey**

Tea- "Indian tea" patriotic substitute for black English tea.

Argemone polyanthemus, **Prickly**

Poppy-, - called "thistle used to dye arrows yellow"

Thelosperma trifidum, **Greenthreads**-

: called the finest of prairie teas.

Dalea purpurea, **Purple Prairie**

Clover:- "broom weed" tough stems tied together as broom; roots chewed for pleasant taste; leaves dried and used for tea.



Opuntia sp, **Prickly Pear Cactus**:-

"raspberry-watermelon" plant. Used pads, fruit, and juice of the cactus.

Chrysopsis villosa, **Prairie Golden**

Aster, - Cheyenne called it "chickadee plant"; soothing, quieting tea from tops and stems; burned as incense.

Stipa spartea, **Porcupine Grass**- - called "comb plant"; stiff awns bundled together and sharp seed tips burned; used as a comb.

Andropogon gerardii **Big Bluestem**-; stiff flowering stems used for toy arrows, hawthorne thorns used for point.



Prunus besseyii, **Western**

Sandcherry- believed the quality of fruit was determined by the direction in which you approach the plant for harvest.

Prunus virginiana **Chokecherry**-: July called "black cherry moon"

Prunus americana **Wild Plum**-: August called "red plum moon"

Sheperdia argentea: **Buffaloberry**- fruit highly prized after first frost. Used in celebrations for women coming into puberty.



Sambucus americana **Elderberry**-: ate fruit and dipped blossoms in hot water.

Amelanchier alnifolia **Serviceberry**-: main fruit ingredient in pemmican. The combination of dried fruit and buffalo meat combined with fat for winter use.



Prairie Plants for Rain Gardens

A rain garden is a man-made depression in a yard planted with native or adapted plants designed to hold rainwater temporarily to allow it to soak in. Rain gardens are not the same as wetlands, drainage ditches or swales. Swales slope to a destination, such as a creek, while rain gardens do not; however, a swale may end with a rain garden. Any part of a garden that remains soggy or marshy most of the year is more like a bog or wetland. Before getting started it's important to determine the desired location of the garden, the amount of water it can store and how slowly the water infiltrates. Often more water runs off one's roof after a 1" downpour than

we realize. You can then determine what rain garden plants should be selected to match the site.

Native plants are often recommended for rain gardens and swale gardens because they are deep-rooted and more tolerant of local conditions. But that doesn't mean you can't choose from an assortment of non-native plants that are equally adaptable and very easy to grow. Either way, a planting plan design should include plants that tolerate extremes. There will be periods of standing water when the soil is saturated and also very dry periods. Most plant species that grow naturally on the bank of a river or stream will do well in rain

gardens because they are used to growing under these conditions. The plants help absorb excess water as well as filter out excess nutrients flowing into the rain garden. Water is allowed to filter through the soil before entering the groundwater system.

When designing a rain garden, I recommend at least 50 percent of the plant material being made up of prairie grasses, sedges and rushes. In a rain garden you need to make root competition so fierce that all the grasses and forbs are shortened and nothing is allowed to be aggressive. Grasses will occupy spaces that keep aggressive wildflowers in check through competition, while preventing annual weed seeds from taking over any open areas. The leaves and flowering stems of grasses will also help slow down fast-flowing stormwater as it enters a swale or rain garden. Moreover, many spring and early summer wildflowers look great early in the season but can look tired and unattractive by mid-summer. Grasses hide the dormant stems of these spring-bloomers through summer and into fall, while offering their own colorful, showy seedheads.

Prairie grasses, sedges, spike-rushes and bulrushes are a must for creating a wet prairie meadow, offering a more natural look. These plants grow well in low-lying areas that can experience flooding with heavy spring rains. The surface of the soil might dry out in the heat of summer, but the subsoil usually remains moist. You may have to provide supplemental irrigation to this garden during severe drought conditions to maintain an attractive, lush appearance. Sedges tolerate periodic mowing to

maintain a tidy appearance and they will survive dry periods very well. Moreover, sedges are an excellent natural water filter.

Don't confuse the many rain garden-worthy types of sedge with the weedy thug, yellow nutsedge. Yellow nutsedge is in the sedge family of plants but is not a true *Carex*, moreover it was an introduced weed from Europe. Most of the *Carex* plants for the garden are native and form clumps, while others spread slowly as part of a managed turfgrass alternative. The following list of plants includes sedges, rushes and native prairie grasses that are very adaptable and suitable for most rain garden plantings.

Dry-Moist Zone

Native Grasses suitable for dry to moist areas



Andropogon gerardii, **big bluestem** 5-6' h, 2' w

Impressive native of the tall grass prairie. Rich, green leaves to 2' by late

June. Seedheads resemble turkey's foot. Reliable copper, burnt orange and maroon fall color. Full sun, wide condition range, drought-tolerant; rain garden, swales, wet meadows.

Carex bebbii, **Bebb's sedge** 1-3' h, 18" w

A tufted plant with a dense mass of bright green grass-like leaves emerging early in the spring; the spike-like seed heads are not showy but will add variety to any planting; rain garden, swales, wet meadows.

Chasmanthium latifolium, **northern sea oats** 3-4' h, 2' w

This grass is noted for its flat, oak-like seed heads that turn from a translucent green to a rich brown in fall; it is an aggressive reseeding plant but it much more manageable in shady situations and woodland edges.

Elymus canadensis, **Canada wildrye** 4-5' h, 2' w

Attractive nodding seedheads remain attractive well into winter, but often flops; coarse so limit use to large naturalized areas; blue-green foliage emerges early in spring and turns tan in fall.

Panicum virgatum, **switchgrass** 5-7' h, 2' w

This versatile grass will grow in about any soil and should be in every rain garden planting; lush foliage, stiff stems and fine, airy seed heads all turn an attractive golden brown in fall; rain garden, swales, wet meadows.

Spartina pectinata, **prairie cordgrass** 5-6' h

This grass is the king of wet prairies with graceful arching foliage that

turns a bright yellow in fall; very aggressive and best planted in confined areas or surrounded by a mowed turfgrass; for bank stabilization, swale plantings or wet prairie meadows.

Caution: AGGRESSIVE.



Sorghastrum nutans, **Indiangrass** 4-6' h', 2' w

Wider light green leaf turns reddish-yellow in fall and persists through winter. Golden seedheads are another attractive characteristic of this warm-season grass. Full sun, moist to dry soils.

Introduced Grasses, Sedges

Calamagrostis x acutiflora **Reed Grass Feather**

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' has white-edge leaves and 'Avalanche' has white center stripe; 'Strica' earliest to bloom, very upright; very well behaved grass. Moderately drought tolerant; rain garden, swales.

Miscanthus **Maiden Grass**

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; rain garden, swales

'Autumn Red'- 3-4' early bloomer with reddish-purple fall color;

'Gold Bar' – heavy gold striping; compact, upright habit 3-5' high;

'Morning Light' – white and green variegation; fine, narrow leaves; upright arching habit to 5' high.

'Strictus' -with yellow bands on the foliage;

'Gracillimus'- has reddish-pink seed heads; graceful arching habit

'Giganteus' -grows to 12' high!

'Variegata' – bright white and green variegation; strong arching habit; tolerates part-shade; grows to 6'.

'Zebrinus' – bright yellow bands on the foliage.

Wet Zone

Native Grasses suitable for areas where water collects for longer periods of time

Carex comosa, **bristly sedge** 1-2'h, 18" w

This wet loving plant is noted for

its arching habit and drooping bottle brush seed heads in late spring; this easy to grow bunch-type plant; rain garden, swales, wet meadows, wetland.



Carex grayi, **gray's sedge** 2-3' h, 2' w

A favorite sedge with arching, fountain-like habit; the unusual seed heads resemble spiky clubs; leaves remain dark green late into fall and emerge in very early spring; rain garden, swales, wet meadows, wetland.

Carex hystericina, **bottle brush sedge** 1-2' h, 2' w

The spikelets of this sedge look like "spiny cocktail weiners" and will do a great job of adding interest to any rain garden planting; rain garden, swales, wet meadows, wetland.

Carex muskingumensis, **palm sedge** 2-3' h, 2' w

Grass-like leaves radiate out from the stem. Light green foliage turns yellow with frost. Full to part sun, very adaptable; tolerates dry conditions; a must for rain garden, swales, wet meadows, wetland.

Carex scoparia, **pointed broom sedge** 1-2' h, 18" w

Another attractive bunch-type species for wet soils; spikelets are pointed and mature to a nice brown color in early

fall; rain garden, swales, wet meadows, wetland.

Carex stricta, **tussock sedge** 1-3' h, 2' w

This sedge is noted for its fine texture and rich green color; very adaptable; it works well in swales, pond or stream or in moist soil massed as a groundcover.



Carex vulpinoides, **foxtail sedge** 2' h, 2' w

This graceful sedge forms a fountain-like clump of bright green foliage early in the season; yellow-brown seed heads reminiscent of a foxtail spray out to add to the fountain affect; easy to grow, not aggressive and very adaptable; rain garden, swales, wet meadows, wetland.

Eleocharis acicularis, **needle spike rush** 6-12" h,

This spike rush is noted for its very dark green, needle-like foliage; each of the fine stems are topped with a narrow spikelet; forms dense mats and is a great addition for the edges of wet meadow gardens, moist soils and shallow water; very attractive when allowed to spread between landscape boulders in soggy soil.

Equisetum hymale, **scouring rush**

This classic wetland plant noted for its hollow segmented stems, each marked with a gray band; this bamboo-like plant remains evergreen in the winter; very aggressive spreader and will need containment.

Juncus effuses 'Spiralis', **corkscrew rush** 1' h, 1' w

One of the most common rush species in North America. 'Spiralis' has needle-like dark green foliage with distinctly strong spirals to form a corkscrew affect; easy and affective; wet meadows, wetland.

Juncus interior, **inland rush** 2-3' h, 2' w

The rushes are important components to the ecology of wet prairie meadows, but they also offer stiff, forest green stems that create strong vertical lines in the garden; rich brown flower clusters top each stem.

Juncus torreyii, **Torrey's rush** 1-2' h, 1' w

This distinctive clump-forming rush species has dark green, stiff leaves and topped with dense, rounded seed heads that turn reddish-brown in fall; wet meadows, wetland.

Scirpus atrovirens, **dark green bulrush** 3-5' h, 2' w

This species is more refined than other robust bulrush species; a clump former with dark blue-green basal foliage, slender flower stems, each topped with dark brown flower clusters; wet meadows, wetland.

Dry Zone

Wildflowers suitable for dry areas of the garden such as the berm

Allium cernuum, **nodding pink onion**
18" h, 18" w

Clumps of grasslike leaves; blooms late summer; nodding flowers atop naked stalks in shades of pink to white; rain garden, swales.

Aster umbellatus, **flat-topped aster** 4-6' h, 2' w

This is a strongly upright aster with stiff, upright stems and attractive dark green foliage; the foliage remains clean all season; in fall a cloud of small creamy-white flowers top plants; a bee and butterfly magnet.



Baptisia lactea, **white wild indigo** 5-6' h, 2-3' w

A mature plant looks like asparagus when it emerges in spring; quickly grows to an impressive 5-6' high by summer; topped with milky white flower spikes in late spring followed by black seedpods; blue-green foliage forms an umbrella-like canopy; slow to reach maturity but well worth the wait; looks great with grasses.

Cassia hebecarpa, **wild senna** 4-6' h, 2' w

A robust grower with attractive foliage reminiscent of honeylocust trees; topped with bunches of yellow pea-like flowers in July and August, followed by brown seedpods; very adaptable to wetland or mesic sites.

Pycnanthemum virginianum, **mountain mint** 3' h, 2' w

A bushy plant with mint-scented dark green foliage; topped with clusters of pale white flowers July-September; very adaptable; not a true mint and is not aggressive like the common herb *Mentha*.

Ratibida pinnata, **greyheaded coneflower** 4-5' h, 2' w

Blooms are gray cones surrounded by bright yellow drooping petals up to 3" long. This native prefers full sun and tolerates wet to dry soils; it can be an aggressive seeder so grass competition is a must.

Dry-Moist Zone

Wildflowers suitable for dry to moist areas

Mesic plants are plants for moderately moist habitats. They tend to grow well in areas that are excessively wet in winter, spring and after heavy rains, but often dry out in summer. They do best around seeps and in low areas that may have standing water for a few days after a hard rain. Most of these plants do very well in damp soils, but can tolerate dry periods. The following wet mesic plants are perfectly suited for rain gardens, wet prairie meadows, detention basins and most swales. Among this list are plants that are highlighted as wetland species.

Asclepias incarnata, **swamp milkweed** 3-5' h, 2' w

A very attractive plant topped with clusters of pretty magenta flowers in early summer; one of the best butterfly plants and should be included in every rain garden planting; easy to grow and can tolerate wetland conditions to dry

soils; 'Ice Ballet' has classy white flowers; rain garden, swales, wet meadows, wetland.

Aster novae-angliae, **New England aster**
2-6' h, 2' w

This popular wildflower has a showy display of violet to pink daisy-like flowers in fall; many outstanding rain garden worthy selections available; reseeding can become a problem if not given competition.

Echinacea purpurea, **eastern purple coneflower** 3' h, 18" w

Recognized by its showy, pink-purple cone-shaped flowers in July-August; numerous cultivars have been developed for flower quality and plant form; reseeds and can slowly take over a garden; provide competition.

Eupatorium maculatum, **Joe-Pye plant** 5-7' h, 2-3' w

An impressive plant with flat-topped clusters of mauve pink flowers up to 1 foot across in late summer; a butterfly favorite; handsome toothed foliage with red-purple stems.

Filipendula rubra, **Queen of the Prairie**
4-5' h, 2' w

One of the best wet soil plants with large pink plumes atop upright stems; sweetly scented and reminiscent of cotton candy; very easy to grow with a basal clump of handsome dark green, serrated leaves.

Filipendula ulmaria, **Queen of the Meadow** 3-5' h, 2' w

An elegant plant with creamy-white, asilbe-like flowers; blooms in early summer atop a clump of dark green

serrated leaves; ideal companion with beebalm; full to part sun.



Gentiana andrewsii, **bottle gentian** 18" h, 18" w

A beautiful plant with attractive glossy foliage; clusters of bright blue, bottle-like flowers in fall never fully open; easy to grow and long-lived in rich soils; sun to part shade.

Helenium autumnale, **Helen's flower** 4-5' h, 2' w

This robust grower has blemish-free foliage topped with masses of daisy-like, bright yellow flowers in late summer; best planted among prairie grasses to keep from flopping; easy to grow and dependable.

Liatris pycnostachya, **thickspike gayfeather** 5-6' h, 2' w

This robust species has lance-shaped lower leaves that form a grass-like clump; in summer thick violet-purple flower spikes rise above the foliage; the heavy spikes can fall over so best

combined with grasses to introduce competition.

Liatris spicata, **marsh gayfeather** 3-4' h, 2' w

A showy plant with clumps of grass-like leaves and bold purple-pink flower spikes in summer; very adaptable and easy to grow.

Monarda fistulosa, **wild bergamot**

Fragrant lavender flowers bloom atop upright stems in mid to late summer; often loses its lower leaves by mid summer so best planted among tall grasses to hide the bare legs.



Physostegia virginiana, **obedient plant** 3-4' h

A lovely wildflower with stiff, upright stems and very showy bright pink flower spikes in late summer; provide intense competition by planting grasses around this plant to help prevent flopping and to keep from spreading aggressively.

Solidago riddellii, **Riddell's goldenrod** 3-4' h, 2' w

This is an interesting and attractive lowland species of goldenrod with long, narrow leaves and stiff stems topped with flat-topped clusters of yellow flowers in fall. This clump-forming goldenrod is ideal for wet areas of wild gardens, prairies, meadows, native plant gardens or naturalized areas.

Spiranthes cernua var *odorata*, **nodding ladies tresses** 12-15" h, 12" w

Basal rosette of shiny, dark green leaves up to 8" long with white flowers arranged on a wand in a twisting spiral; fragrance similar to vanilla or jasmine. Easy to grow in damp to moderately dry soils.

Thalictrum dasycarpum, **purple meadow rue** 4-6' h, 2' w

Attractive columbine-like foliage in spring give rise to "purple" colored hollow stems topped by a cloud of snowy white flowers in early summer. It can be cut back after flowering. Grows best in rich, moist soils.

Veronicastrum virginicum, **culver's root** 4-5' h, 2' w

Large, erect perennial with elegant white flower spikes in July; handsome deep green foliage in whorls along very stiff stems; Native to open woods, thickets and moist meadows; easy to grow and long-lived.

Zizia aurea, **golden alexanders** 2-3' h, 18" w

Brilliant yellow umbrella-like flower clusters in April-May are reminiscent of dill or parsley flowers; dark green foliage remains blemish-free

all season; sun to part shade; food and nectar source for butterflies.

Wet Zone

Wildflowers suitable for areas where water collects for longer periods of time

Acorus calamus, **sweetflag** 2-4' h

A classic wetland species with bright green leaves reminiscent of flag iris; when bruised the foliage releases a pleasant scent; spreads by rhizomes to form colonies; very adaptable in wet to dry conditions.

Cacalia suaveolens, **sweet indian plantain** 4-5' h, 2' w

A robust plant with large, triangular leaves; spreading plant best planted among grasses to contain; prefers moist soils and can tolerate standing water; small white flowers are not impressive, top plants in July.

Chelone glabra, **turtlehead** 3-4' h, 2' w

A must for any rain garden planting with shiny, dark green foliage; topped with clusters of creamy white flowers that resemble a turtle's head; best in moist soils if planted in full sun; will tolerate 2/3's shade or wetland soil conditions.

Iris virginica shrevei, **blue flag iris** 2-3' h, 2' w

This native iris forms attractive clumps of sword-like leaves; elegant blue-purple flowers are fleeting but develop into attractive seed head clusters by fall; easy in wetland conditions to dry mesic soils.

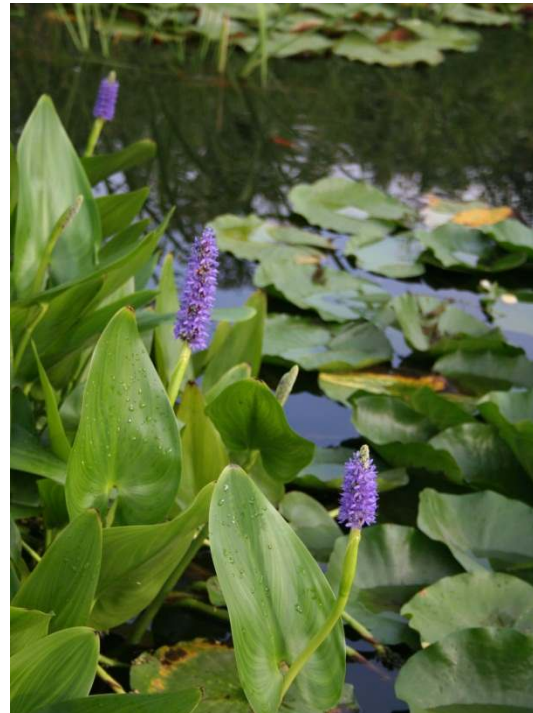
Sagittaria latifolia, **arrowhead** 3-4' h,

This is a shoreline perennial with

distinctly arrowhead shaped leaves; in summer small, three-petaled flowers bloom on long stalks originating at the plant base; spreads by rhizomes to form colonies; best in wetland soils and standing water; one of the very best natural water filters.

Mimulus ringens, **monkey flower** 3' h, 18" w

An upright, bushy plant with shiny lance-shaped leaves; blue-violet snapdragon-like flowers bloom in late summer; easy to grow and will reseed, but is not aggressive; one of the best wetland plants.



Pontederia cordata, **pickerel rush** 18" h, 18" w

One of my favorite wetland plants with large, shiny leaves; blue flower spikes in summer are a favorite of bees & butterflies; will grow in standing water or rich, wet soils; one of the best water filtration plants.

Introduced Perennials for Wet Soils

Actaea ramosa 'Brunette', **brunette baneberry** 5' h, 2' w

A beautiful plant with deep bronze, deeply cut leaves and rosy-white flower spikes in mid-summer; best in part shade or full sun with plenty of moisture and rich soils; slow to mature so be patient.



Hibiscus species 3' – 8' h, 3-4' w

Many choice selections that are winter hardy and easy to grow; vigorous and robust, they are slow to emerge in spring, then grow quickly, thriving in the summer heat; plate-sized flowers by mid summer.

Houttuynia cordata 'Chameleon' or 'Plena' 15" h

This plant is known for its bright pink, white and green leaves and for its aggressive habit in wet soils; the foliage

often reverts to plain green by the heat of summer; best used in confined areas or bordering mowed areas; I like 'Plena' for its dark green, heart shaped leaves and complimentary small white flowers.

Iris pseudoacorus, **yellow flag iris** 5' h, 3-4' w

A big, robust iris with long, sword-like leaves; blooms in summer with bright yellow flowers; use with caution because it often outgrows its space and wears out any welcome.

Iris ensata, **Japanese iris** 2-3' h, 18" w

This iris has unique, flattened flowers and attractive, bright green foliage; very adaptable, easy to grow if provided rich, moist soils; some cultivars have bright variegated foliage.

Ligularia dentata 'Othello', **leopard plant** 3-4' h, 2-3' w

An impressive plant with large, red-purple leaves and orange flowers in summer; plants often wilt in the heat of summer and look tired; best in part shade to provide relieve from hot afternoon sun; it can reseed and become a thug, so deadhead spent flowers.

Ligularia stenocephala 'The Rocket', **leopard plant** 3-5' h, 3' w

This leopard plant is known for its large, jagged foliage and impressive bright yellow flower spikes in early summer; this beauty will wilt in the heat of summer unless they are provided moist soils and afternoon shade.

Lysimachia punctata 'Alexander', **garden loosestrife** 3-4' h, 2-3' w

A bushy, upright plant with variegated foliage and bright yellow, star-shaped flowers set in among the leaf axils;

adaptable but best in consistent moisture; can be a thug so confine with grasses.



Solidago rugosa 'Fireworks, **fireworks goldenrod** 3-4' h, 3-4' w

The lacy, radiating bloom spikes of this goldenrod are reminiscent of a golden shower of fireworks, only this firecracker blooms in September. A fantastic selection for wet areas.

Dry-Moist Zone for Part Shade

Plants are suitable for dry to moist areas

Anemone canadensis, **meadow anemone** 12-18" h

Native groundcover plant with handsome, deep green foliage; delicate white flowers in mid spring; very aggressive runner so best planted in wet ditches, swales or prairie meadow gardens among grasses and sedges

Calamagrostis brachytricha **Korean**

feather reedgrass

Native to woodland edge in Asia. Glossy foliage with feathery pink flowerheads in September. Prefers consistent moisture. Easy to grow in most soils and tolerates up to 2/3's shade.

Carex plantaginea, **plantain-leaved sedge** 1' h, 1' w

Attractive clump-forming sedge with broad, 1" shiny evergreen leaves that are crinkled like seersucker ribbon. Best growth in moist soils and part shade, but tolerates dry soils in shade; rain garden, swales, wet meadows, wetland. Eastern U.S. native.

Carex species, Sedges

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 moderately dry soils; best in dappled shade and combine nicely with hosta; great in container plantings too

'Ice Dancer'- has cream white leaf margins to 12" high.

'The Beatles' makes a deep green mop for groundcover, only 6" high.

'Evergold' – bright yellow variegation to 12"

Elymus villosus, **silky wildrye** 2-3' h, 2' w

This graceful grass has shiny green foliage and refined rye-like seed heads in early summer; very adaptable and will reseed readily; best in dappled shade and meadow plantings. Nebraska native.

Eupatorium coelestinum, **mistflower** 1-3' h, 2' w

This plant spreads by rhizomes to form a nice groundcover; slow to emerge in the spring, plants are topped with dense clusters of blue-purple flowers reminiscent of *Ageratum* flowers in late summer; wet or dry.

Geranium maculatum, **wild geranium** 18" h, 18" w

This beauty has pink to lilac flowers in spring and early summer. Dark green foliage forms nice clumps and remains attractive all season; best in part sun; will grow in consistently moist soils and tolerates dry periods.

Hystrix patula, **bottle brush grass** 3-4' h, 1-2' w

Bristly flowerheads appear above loose tufts of foliage in summer and last until winter. Full to part sun, site adaptable, but prefers dappled shade and moist soils. Nebraska native.

Lobelia cardinalis, **cardinal flower** 2-3' h, 18" w

This native beauty is known for its brilliant cardinal red flowers, held on spikes in July and August; a short-lived plant, it requires rich, organic soils, part-shade and consistent moisture to perpetuate in the garden.

Lobelia siphilitica, **great blue lobelia** 3' h, 2' w

Dark blue tubular flowers top plants in late summer; light green, lance-shaped foliage; adaptable and will grow in rich, moist woodlands, but best in part shade and very wet soils; Nebraska native.



Polemonium reptans, **creeping Jacob's ladder** 1' h, 1' w

Light blue, bell-shaped flowers in loose, clusters appear mid to late spring. Weak-stemmed. Prefers moist, humusy, well-drained soil and part shade. Nebraska native.

Solidago flexicaulis, **zigzag goldenrod** 2-3' h, 2' w

This goldenrod has attractive, serrated leaves that remain blemish free all season; in fall, flower spikes top the stems zig-zag their way up to the top. Nebraska native.



Growing Trees with RootMaker® Containers and Grow Bags

One of the things I've learned from growing and transplanting trees for over 20 years is that a typical transplanted tree needs better roots. Bare root trees usually lack fine roots to help absorb nutrients and water; the roots of balled and burlapped trees are often buried too deep in the ball; and container trees typically have circling and kinked roots. Moving trees with a tree spade works great, but not every site has space for a big piece of equipment and a tree spade can cut major roots and remove up to 95 percent of the tree's root system.

I was first introduced to Carl Whitcomb's RootMaker Products when I came to Nebraska Statewide Arboretum in 2001 and I was very skeptical at first. Since I had never heard of grow bags, I read as much as possible of the research Whitcomb had done. According to those studies, root pruning containers create fibrous root systems at every phase of nursery production from propagation to

large trees—above-ground, in-ground and even in pots. This is accomplished by:

- Air-pruning young seedlings with RootMaker and RootBuilder plastic pots
- Root constriction for older seedlings with knit fabric tree bags
- Root trapping for above-ground growth with RootTrapper containers.

RootMaker and RootBuilder containers have many small openings along the bottom and sides. As new root tips grow out and come in contact with the side wall, they are directed toward an opening. As root tips extend out of the containers, they are naturally air-pruned. This not only stimulates root branching, but also prevents circling roots. As the seedlings develop, they can be moved into larger RootMaker containers or planted in the field using knit fabric grow bags. It's important to use a good, bark-based soilless mix and slow release fertilizer in

these containers. Following the "4-inch Rule," i.e. allowing about 4" of new sidewall distance between old rootball and the side of the new container, means the roots will continue to branch out within the grow bag. And since the fibrous root system continues to grow, the tree maintains a vigorous growth rate.



I have planted bare root trees into larger RootMaker containers and into knit fabric grow bags but this isn't the best practice to use because roots are typically so large they bypass the small openings and circle the pot or bag. Grow bags have thousands of small openings to allow small root hairs to grow through the hole and then get constricted as they expand. Some root-pruning is better than none, so if you plant bare root or from a conventional pot into a growbag be sure to cut any larger, circling or kinked roots. As the fine new roots emerge, they pass through the openings and are constricted.

The best practice is to start trees from seed using propagation containers. I usually germinate seeds in flats and transplant small seedlings to RootMaker trays. I do this because germination can be variable and this allows you to get 32 of the same size in one tray. After 8-10 weeks, I shift plants from trays into larger 1-gallon RootMaker containers. I grow

these on until late summer and then shift them up into 3-gallon RootMakers for above-ground growing or plant them in the field in knit fabric grow bags. I typically plant seedling trees in 12" grow bags and by year two or three I have a nice 1" caliper tree. I use a topsoil/compost mix for the knit fabric grow bags and plant them partially in the ground. It's essential that this soil mix drains well. I place the planted bags 4' on center and bury them in wood chip mulch so the tops of the bags are visible. The mulch helps reduce the need for watering and provides insulation during winter months. **Harvest trees when dormant. The grow bags make harvesting easy, just make sure to cut the grow bag off before planting the tree in a permanent site.**

The soft-sided RootTrapper containers are for above-ground growing. They have a white outer coating that greatly reduces container temperature so roots don't die on the side exposed to sunlight as with black plastic containers. Water demand is also reduced as there are no large drain holes or evaporative sides; water seeps out the hundreds of holes created by the base stitching. This unique container also creates a fibrous root system by trapping the root tips. When a root reaches the sidewall, it is trapped and branches out, so secondary roots continue to develop rather than large roots growing and girdling the container. RootTrappers also can be specially made to fit inside conventional pots to solve the problem of circling roots.

I encourage tree-growers to look into the RootMaker system. It develops root systems with a greater surface area than conventional production methods, resulting in an increase in growth rate, establishment, transplant survivability, and ultimately, superior performance of trees.



From the Ground up

"Mankind owes its existence to the top six inches of soil and the fact that it rains." Unknown

Soil makes a difference... ask any gardener. And the longer they've gardened, the more attention they're likely to give to it. Soil can determine whether plants survive or thrive, how quickly root systems develop, whether roots winterkill from too much moisture, how often they have to be watered and their susceptibility to pests, diseases, wind and heat.

Those problems won't reveal themselves until later, but simply sticking a spade in the soil can tell you a lot. If it's hard to get the spade in and the soil doesn't readily break apart, it's probably high in clay. If it sinks in with almost no effort and doesn't clump at all, it may be high in sand. If the soil forms clumps that break apart easily, it will likely be a good planting site.

Healthy soil is made up mainly of rock and mineral particles, with 5-10 percent organic matter and about 25 percent each of water and air. The soil type is generally defined by the size of the inorganic soil particles: sand has large particles so water and nutrients flow through it quickly and it feels gritty; silt has medium-sized particles that crumble in your hands and feel smooth and powdery when wet; clay has very small, flat particles that feel sticky when wet and pack together in clumps when dry.

In the midwest, clay tends to be the most problematic soil. The small particles pack together and leave little pore space so it drains slowly and can stay waterlogged for a long time. It's usually low in organic matter and in microbial activity and even though it may be nutrient-rich, those nutrients may not be accessible to root systems.

Though organic matter normally accounts for only 5-10 percent of soil make-up, its importance is dramatic. It contains essential nutrients, retains moisture and binds particles together in a way that allows air and water to move through. Its most important role may be that it provides food for microorganisms—bacteria, fungi, worms, insects, microbes—that help convert the soil into the vitamins, nutrients, hormones and disease-suppressing compounds plants need in order to grow. These microorganisms need air and water to survive and they in turn create passageways for air and water and, through their excretions, slow their transport so they can be absorbed as needed by plant roots.

If you think you have a nutrient deficiency, you can have a professional soil test done by Cooperative Extension Service or by an independent soil lab, preferably one nearby. If the pH of your soil is much higher or lower than 6.5 to 6.8, nutrients may be bound to the soil particles and not available for plant growth.

Regardless of the soil pH, organic matter tends to moderate imbalances on either side. And the best amendment for soil of any texture—clay, silt or sand—is organic matter. In clay, it forces the tightly packed particles apart, improves drainage and allows plant roots to penetrate. It enriches silt. And in sand, it lodges in the large pore spaces and acts as a sponge, slowing drainage so the soil stays moist longer.

Improving soil is no quick matter, but it doesn't have to be overwhelming either. Keep in mind that most plant roots and most soil microorganisms are located in the top 6" of soil; so we're not talking about digging a basement!

Level 1. "I want better soil as quickly as possible and I don't want to put a lot of effort into it."

Simply add compost while you're doing normal garden work. Add it when you're putting in new plants or filling in holes in a garden bed. When the weather warms up and it's time to mulch existing beds, mulch them with compost instead of wood chips. Wood chips will eventually break down into compost, but slowly. They're too large to seriously improve soil texture in the short-term and new wood chips remove nitrogen from soil rather than provide it.

What is compost? Basically compost is a mixture of decaying organic matter—leaves, kitchen scraps, grass clippings, hay, manure—used to improve soil structure and provide nutrients.

Level 2. "I want a new garden bed with great soil and I'm willing to wait 6-12 months to get it."

Starting a new garden bed can be overwhelming—especially if you're getting rid of turf or breaking up hard pan. Regardless of what your soil is like, adding organic matter is one of the best things you can do; and one of the easiest methods we've found is the "mulch-gardening" method recommended by

Cathie Draine, Master Gardener and writer from South Dakota.

To create a new garden bed, you build up a series of thin layers of organic waste and then—the essential part—heavily water down the whole area to decompose over the winter. Watering encourages insect and worm activity, settling in, decomposition and prevents drying out or “pressing” the materials. Since layers are quite thin, moist and only stacked about 12-20” high (resulting top soil will be half that height), the temperature doesn’t get as high as in normal composting; and since it offers the right conditions for worm and insect activity, more labor-intensive methods of turning and mixing the layers are unnecessary.

To start a new bed on top of lawn, you may want to first lay down soaked layers of newspaper to help smother existing grass. Then begin the layering process, alternating 2-3” layers of leaves (the more decomposed or broken the better), kitchen waste, compost, grass clippings, soil and hay. Moldy, rotted hay is best if you can find it. You can also add used coffee grounds, still in filters if you want. Water the layers in regularly as you’re piling them on, mix the layers with a pitchfork slightly and don’t add woodchips or sawdust, which will slow down the decomposition. As it breaks down, it will settle to about half the depth of the original layers. Keep it moist through winter, and by spring you’ll have rich, workable soil. (Note: You won’t be skeptical once you’ve tried this; it works.)

Creating a mulch bed is similar to creating a compost pile, and in fact you are creating compost. The difference is that this is done in very small layers, right where you want the new bed, it’s heavily

watered down and the temperature remains low enough so that earthworms and microorganisms do the mixing. Some over-the-counter insecticides and fungicides kill 60 to 90 percent of the earthworms present in the soil, so don’t use pesticides nearby.

This is far easier than you might imagine and the benefits are numerous: garden beds can be built on top of soil or even on top of existing lawn; it requires less physical labor than bagging and hauling away lawn and leaf waste; doesn’t have to be tilled in or spaded over; uses materials already at hand; and, if it’s done correctly and with a lot of water, can do its work in the course of just one season.

What about beds for trees and shrubs?

Trees and shrubs need slightly different planting environments and also benefit greatly when planted within a new garden bed. Woody plants develop such large root systems that it’s usually best NOT to amend just the backfill going back into the planting hole. If the soil varies too greatly from the root ball to outlying soils, roots may not spread out away from the root ball as desired. Instead, it is better to create a planting bed and amend the soil in the entire bed. Breaking up the soil around the root ball and adding compost within a planting bed will help roots spread and grow quickly into the loose, organic soil.

For trees already in the landscape, you have to be careful not to damage roots. But if you want to enrich the soil, you can spread an inch or so of compost over the soil surface every year or so and let earthworms, microorganisms and rainwater carry it downward to gradually improve the soil.



Growing Woody Cuts

When it comes to planting shrubs around the home landscape I like plants that provide showy spring flowers or vibrant fall color. But I also want a shrub that I can put to use. Most woody shrubs are ornamental in some way but what I really want to know is what effect these plants will have on my home and me. Why not expand my tastes and look for shrubs

that not only make excellent landscape plants, but can be used as a cut woody ornamental for a harvest of decorations in and around the home. Can I eat the fruit or cut the fruit covered branches for decoration? Can I cut branches for forcing indoors or use the colorful or contorted stems for container arrangements?

Woody floral plants include mainly shrubs that have a colorful or contorted stem, showy buds, flowers, fruit or interesting leaves. The use of woody florals in container arrangements has been popular in the florist industry for years and demand for these colorful products continues to rise. Homeowners can plant them too, using the forced flowers, different colored stems and unusual plants in and around the home to create original designs. The increased demand has led to the development of Nebraska Woody Florals, a consortium of Nebraska growers who have come together to provide florists with fresh woody florals of the highest quality. They provide wholesale florists with a wide array of high quality woody stems, harvested on demand for color and flexibility.

What to Plant

When selecting plants to grow for woody cuts, look for plants that:

- Have the ability to grow well in Nebraska and regrow rapidly after frequent pruning.
- Produce numerous stems over a long period of time.
- Produce stems at least 18" long.
- Retain flowers, berries, or foliage well.
- Have a long vase life.
- Produce harvestable branches early in the plant's life.
- Extend your season from forced flowers in the spring; to berries or bright foliage in the fall; to red berries and/or green foliage for Christmas.



Forcing Spring Indoors

The perfect remedy to chase away the dreary winter blues and bring some spring color into your home is to force some woody stems from your favorite spring-blooming trees and shrubs.

Almost any shrub that blooms in early spring can be forced into bloom inside. Late winter to early spring is not only the best time to prune deciduous trees and shrubs, it is also the best time to cut branches for forcing.

Pussy willow, flowering quince, dogwood and forsythia are among the most common and easiest woody plants cut for forcing. The following plants are not as common but very easy to force and they make excellent landscape plants as well.

- **Corneiliancherry Dogwood**, *Cornus mas* – abundance of small yellow flowers
- **Vernal Witchhazel**, *Hamamelis vernalis* - Early spring blossoms. Fragrant.
- **'April Snow' Weigela**, *Wiegela praecox* –pure white, fragrant flowers in early spring.
- **Clove Currant**, *Ribes odoratum* - yellow flowers with spicy clove scent in early spring.

Suitable branches can also be cut from wild plum, beautybush, serviceberry, Koreanspice or Burkwood viburnum, cherries, lilacs, Deutzia and red maple. Early spring 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.

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 colorful explosion of spring. If you haven't forced spring blossoming shrubs before, make this the year.



Summertime-- A Good Time for Cuts

There are a number of shrubs and some small trees that are a good source for fresh flowers, seed pods or attractive foliage in summer arrangements. The plants listed below are a few examples of woody cuts that can be harvested in the summer.

- **Butterfly Bush**, *Buddleia x weyeriana*- A hybrid with yellow-orange flowers. 'Sun Gold' has long vase life. Other selections worth cutting and best picked when half the flowers have opened.
- **Smoketree**, *Cotinus coggygria*- Purple foliage selections have a good vase life.
- **St. John's Wort**, *Hypericum frondosum*- Summer bloomers with smooth bluish-green foliage. Attractive dark brown seed capsules in fall, useful in dried arrangements.
- **Blue-Mist Spirea**, *Caryopteris clandonensis*- Blue-green leaves and bright blue flowers in late summer; good vase life
- **Goldenraintree**, *Koelreuteria bipinnata*- Fruits collected in pink stage and dried last for years.
- **Northern Bayberry**, *Myrica pensylvanica*- Aromatic, dark glossy leaves have a good vase life; gray fruits in winter on female plants.

Fall Is Harvest Time

In the fall after the first hard freeze I discard spent bedding plants from my containers and replace them with colorful cut stems, dried grasses, showy seed heads and clusters of berries to carry me into the next season's colors. A patio, deck, balcony or doorstep can

provide enough space for a decorative, attractive display. To design a container that shines in fall, branches are chosen for their beauty simply as bare branches—such as redbud and yellowtwig dogwood—cut when dormant. Branches chosen for their ornamental fruits are generally cut after the fruits are mature. Bittersweet should be cut before its pods open; the vines are stored dry. Woody florals retain their bright colors for a long time in outdoor containers, for me often until early spring.

A group of plants commonly grown for the interesting color of their stems are varieties of Redosier dogwood, *Cornus sericea*. The dogwood stems will be green during the summer, but change color during cold winter weather. Do not put the cut stems into water, but store them dry. They will last for months.

- 'Bailey's Red' or 'Cheyenne'- bright red stems
- 'Cardinal'- bright cherry red stems
- 'Colorado'- orange-red stems
- 'Yellowtwig' (*Flaviramea*)- chartreuse- yellow stems

Another plant with interesting stem color and shape is Corkscrew willow, *Salix matsudana*. Reaching 25 to 30 feet in height with a spread of 15 feet, these plants are really small trees.

- 'Scarlet Curls' Willow- scarlet red young stems in winter, the older stems are golden brown.
- Golden Curls' Willow- golden yellow stems with a semi-drooping nature. Tends to develop a more shrubby form than Scarlet curls.

- Curly Willow 'Tortuosa'- gnarled and contorted gray-brown branches make a wonderful conversation piece and a great accept in the winter landscape.

Besides the red-stemmed and yellow-stemmed dogwoods, I have also combined the bright green stems of Japanese kerria with the red buds and purple-black stems of pussy willow. The cut branches of trees and shrubs adorned with bright clusters of persistent fruit make fantastic winter decorations for outdoor containers. Crabapple selections, such as 'Don Wyman' and 'Harvest Gold' hold fruit through the winter, providing showy cut branches for containers or frozen into ice luminaries. Viburnums, such as 'Wentworth' American cranberrybush and 'Cardinal Candy' linden viburnum have bright red fruit that last through the season. Some of my favorite woody cuts include coralberry with clusters of rose-pink fruit along thin arching stems; eastern wahoo for abundant pink fruit capsules; redleaf rose for copious, colorful rose hips; the miniature cones of common alder; large, bright red fruit of winterberry holly and glossy, blue-green leaves of 'Blue Princess' holly.

There is an impressive variety of plant materials available to cut and use. You can gather in the wild, get permission to cut from a garden or you can plant a variety of plants in your own garden. You can plan ahead now and begin planting around your home for a harvest of decorations throughout the year.



Recommended Hardy Perennials for Xeriscaping in Nebraska

- Perennials form a more pleasing effect when planted in groups rather than rows or singularly. Mass perennials in groups of at least three for waves of color and texture. Design your border with groups of grasses planted adjacent to and overlapping flowering perennials. Grasses soften the transition between showy perennials. Plants should be arranged in a stair step fashion so short plants are in front and taller ones in back of the border.

- If possible prepare the planting site in the fall to give yourself plenty of time for planning and reflection. If possible till the existing sod into the soil along with up to 6-8" of topsoil, then add at least 6" of topsoil to raise the grade of the bed. A well-drained site should resemble the crown of a road where heavy rains drain away to the sides of the bed.
- Many perennials are adaptable and will grow in a broad range of conditions, but it is best to group perennials with similar growing requirements in the same area. Perennials that prefer more moisture prefer a more moist, rich, well-drained soil and xeriscape perennials prefer thin, well-drained and dry soils.
- Free standing beds or island beds can be viewed from all sides. These informal beds can be any shape, round, oval, teardrop, or thumb-shaped. Because they are accessible from all sides they are easier to maintain than standard borders. They admit more sunlight and circulation, which benefits plants, and they hold more possibilities for plant combinations.

Non-Native Perennials for Hot, Sunny Areas

- The following list of non-native, sun-loving perennial plants are hardy to at least -30 degrees or hardiness zone 4 and many perform there best when grown in full sun and well-drained soils. Avoid planting in heavy clay soils as poor winter drainage can cause root rots. Heavy urban soils need to be raised above grade

with organic matter or topsoil amendments. Many are drought tolerant and dislike consistently moist soils.



Amsonia or bluestar – Amsonia spp. – easy to grow with light blue star-like flowers atop thin stems growing to 3' h. in spring; bluestar (*A. tabernaemontana*) tolerates wet sites, has willow-like leaf; shining bluestar (*A. illustris*) tolerates drought, has glossy leaf; threadleaf bluestar (*A. ciliata*) has narrow leaf turns yellow in fall.

Artemisia – Artemisia spp. – soft, gray foliage a must for the hot, sunny border; must have a well-drained site to perform best; fringed sage (*A. frigida*) is an 18" native similar to 'Silver Mound' (*A. schmidtiana*); 'Sea Foam' (*A. versicolor*) gives a frothy appearance; 'Silver Brocade' (*A. stelleriana*) forms a dense ground hugging mat; all benefit from a summer or late winter pruning.

Bachelor Button, perennial – Centaurea spp. – prefers full sun and good drainage; 18-24" tall; knapweed (*C. dealbata*) has deeply fringed lavender to pink flowers and mountain bluet (*C. montana*) has deep blue flowers with a reddish-tinged

center; blooms in late spring to early summer; shear after blooming to remove seed for new flush of growth.

Basket-of-Gold – *Aurinia saxatilis* – nice gray-green mounds of foliage to 15”; clusters of bright yellow flowers in early spring; requires full sun and good drainage; shear back half after flowering.

Black-eyed Susan, Missouri – *Rudbeckia missouriensis* – large, showy, yellow, daisy-like flowers with black center cones in summer; 18” h. stems over a 12” mound of fuzzy leaves, prefers almost any well-drained, dry soil.

Blanket Flower – *Gaillardia x grandiflora* – coarsely toothed, gray-green leaves; 3-4” solitary flowers of yellow and maroon; seedheads form lovely red spheres; nice dwarf selections; prefers well-drained soil; can be short lived, allow to reseed.

Candytuft – *Iberis sempervirens* – attractive dark evergreen, needle-like leaves; nice ground cover to 15”; a profusion of cute 4-petaled white flowerheads in spring; prune in spring and after flowering for new growth; ‘Autumn Snow’ blooms on a 12” plant in spring and fall; ‘Compacta’ is a 4-6” dwarf.

Caryopteris – *Caryopteris x clandonensis* – attractive narrow gray-green foliage on woody, shrub-like plants; may die back to the ground in winter; cut back hard in spring to new growth; 1-2” blue flower clusters with long showy stamens along upper stems in late

summer to fall; easy to grow; often referred to as blue-mist spirea, although it is not a true spirea.

Catmint – *Nepeta spp.* – spreading mass of dark green to grayish green foliage, spiked blue flowers bloom mid to late summer; leaves are aromatic when crushed; cut back when flowers fade to encourage another flush; ‘Walker’s Low’ (*N. x faassenii*) is a compact mound 10-12” with long flowering stems; ‘Sweet Dream’ (*N. subsessilis*) has large, two-tone soft pink flowers on 18” stems.



Dianthus* hybrids – *Dianthus spp. – compact, sun-loving plants; blooming late spring to early summer usually in shades of white to red with a spicy fragrance; easy to grow when provided great drainage; ‘Prairie Pink’ has large double bright pink flowers on 18” stems, blooms all season; ‘First Love’ has flowers changing from pure white to deep rose from April-frost.

Gaura or apple blossom grass – *Gaura lindheimeri* – loose sprays of airy white or pink flowers held above 2-4’ stems, said to represent butterflies; blooms in late summer, profusely in cool nights of autumn; prefers rich, well-drained soils.

Geranium, hardy – *Geranium* spp. – dependable workhorse; use massed as a groundcover or accent; prefers wet or dry soils in full sun to part shade; shear back by half after flowering to promote a new flush of growth; foliage often has excellent fall color remaining semi-evergreen in winter; 'Biokovo' has delicate pink flowers; 'Bevan's Variety' has deep magenta flowers; 'Johnson's Blue' is long blooming with bright blue flowers; 'Album' has snow white flowers.

Jupiter's Beard – *Centranthus ruber* – small, coral red flowers are domed above upright stems growing 1-3' h.; grows well in a wide soil range, especially useful in rocky crevices where soil is limited; shear back by half after flowering to promote a new flush of growth; 'Albus' has white flowers.

Knautia – *Knautia macedonica* – dark purple to dark red scabiosa-like flowers from July to frost attracts butterflies and is wonderful for cutting; short lived in heavy, wet soils; pinch in spring to promote compact growth; 2-3' h.; 'Mars Midget' is a 16" dwarf with ruby-red flowers; 'Melton Pastels' blooms a variety of pink, red, salmon, and light blues on 4' tall plants.

Lamb's Ear – *Stachys byzantina* – 6" h. mats of velvety white, woolly leaves; can spread aggressively, but can be controlled by dividing; fuzzy flower spikes with small pink flowers arrive in late spring, can be removed as they

develop; 'Silver Carpet' is a non-flowering variety.

Mullein – *Verbascum* spp. – large leaves form basal rosettes of dark green or silvery, woolly leaves; grows upright 2-6' h.; dense clusters of 1" yellow flowers with dark reddish-purple eyes; blooms second year then dies, allow to reseed; 'Jackie' is a 16-18" dwarf with pale peachy-pink flowers; 'Violetta' has dark purple flowers on a 3' plant; 'White Bride' has snow white flowers on a 2' plant.



Onion, ornamental – *Allium* spp. – clumps of grasslike leaves topped by rounded or nodding flower heads; blooms spring-fall; grows best in full sun with any well-drained garden soil; especially nice in rock gardens; 'Mongolian Gem' is an outstanding, tough selection; 'Cowlick' (*A. senescens* ssp. *glaucum*) has mauve flowers in fall, growing 6-12"

Pasque Flower – *Pulsatilla vulgaris* – a European species including many outstanding selections with silky, hairy leaves; delicate cup-shaped flowers in early spring followed by feathery seed heads;; well-drained dry soils a must for longevity; interesting fuzzy foliage.



Penstemon– *Penstemon* spp. – beautiful summer blooming perennials with erect flower spikes; tubular flowers and showy seed heads; allow to reseed to perpetuate in the garden; needs well-drained, dry soils; Rocky Mountain penstemon (*P. strictus*), Penstemon ‘Pikes Peak Purple’ and ‘Red Rocks’ are outstanding selections.

Pincushion Flower – *Scabiosa* spp. – ruffly petals in shades of blue, pink, white, and yellow edge the mounded heads of this 2-3” flower; 1-2’ stems are loosely clothed in lance-shaped to three-lobed leaves; grows best in average, well-drained soil; deadheading promotes new blooms; *S. lucida* has reddish-lilac flowers on 10” plants with glossy leaves, excellent for rock gardens; ‘Mongolian Mist’ (*S. superba*) has dark purple-blue flowers above deep green textured mounds.

Russian Sage – *Perovskia atriplicifolia*
– 4’ spikes of lavender-blue flowers arise from silver foliage from mid-late summer; prefers average to rich well-drained soil, drought tolerant; tough and dependable; pinch back in spring for more compact blooming habit.

Sea Lavender – *Limonium latifolium* – leathery, shiny green leaves form 18” mounds; slender 3’ branches give rise to airy clusters of tiny lavender flowers in late summer; grows best in average, well-drained soil, drought tolerant; easy to grow; ‘Violetta’ has dark purple-blue flowers.

Sedum, stonecrop – *Sedum* spp. – fleshy dark green to blue-gray leaves, often turning red in the fall and evergreen; starchy flower clusters of red, pink, or yellow top the plants; prefers average, well-drained soils; durable groundcover or rock garden plant. ‘Himalayan Skies’ (*S. dasyphyllum*) is a more robust and showy sedum growing to 2’ with blue-gray foliage and pink flowers; ‘Angelina’ (*S. rupestre*) has golden conifer shaped leaves on 6-8” trailing stems, orange fall color.

Sedum, tall – *Sedum* spp. – succulent, fleshy leaves; 2’ stems topped with large flower heads in fall; extremely drought and heat tolerant; clumps can get full with age and flower load, pinch by early summer for compact form; ‘Autumn Joy’ has rosy-salmon flowers; ‘Neon’ (*S. sieboldii*) has deep purplish-pink flowers on 15” stems; ‘Indian Chief’ (*S. telephium*) has coppery red flowers on 15” stems.

Skullcap – Scutellaria spp. – ‘Mongolian Skies’ (*S. scoridifolia*) has shiny leaves and bluish-purple flower spikes in early summer; shear back by ½ after flowering for new flush; very drought tolerant;

Snow-in-Summer – Cerastium tomentosum – small, silvery, woolly leaves form a dense 8” h. carpet; plant is covered in late spring by 1” white flowers; the five petals are deeply notched, giving the appearance of a 10-petaled flower; shear after flowering to promote new compact growth; needs full sun and excellent drainage.

Soapwort – Saponaria ocymoides – 10” tall ground cover with dark green leaves; masses of small bright pink flowers cover the plant for a full month in late spring; shear back by half after flowering for new compact growth; works well as an edger and in rock or wall gardens; ‘Rubra Compacta’ has brilliant red flowers over 2” clumps of foliage; ‘Snow Tips’ is a nice white selection.

Spurge, cushion – Euphorbia polychroma – dark green leaves form a 1’ mound; bracts turn bright yellow in early spring which make them a good companion with bulbs; performs best in well-drained soil in full sun; also grows well in poor, gravelly soil.

Sulphur Flower – Eriogonum umbellatum – long flowering 10” alpine plant with gray-green foliage, rounded yellow flowers appear in early summer; grows best in full sun with well-drained soil, and will also tolerate drought; long lived plant;

combines well with snow-in-summer and dianthus; also called buckwheat.

Veronica – Veronica spp. – excellent perennial selections available as mat-forming ground covers or sturdy plants to 2’ tall; flowers in spike form; all need well-drained, sunny sites for best growth; moderately drought tolerant; Woolly veronica (*V. pectinata*) is a 2-3” h. rock garden plant with white fuzzy serrated leaves; Turkish veronica (*V. liwanensis*) is a 1-2” h. mat-forming plant covered with dark blue flowers April-June.



Yarrow, fernleaf – Achillea millefolium – feathery leaves grow on stems 1-2’ tall; flowers rise above in flat-topped clusters; easily cultivated in any garden soil; drought tolerant, ‘Appleblossom’ has soft pink flowers on compact plants; ‘Debutante’ has a wide variety of colors in dense, 6” flower heads; ‘Hoffnung’ has antique yellow flowers on 18” stems.

Yucca – Yucca filamentosa – erect, sword-like, bluish-green leaves form handsome clumps to 30” wide; leafless flower stalks rise to 5’ in late spring with many creamy-white nodding flowers; drought tolerant

plants thrive for many years with little care; 'Bright Edge' and 'Variegata' are beautiful yellow and white variegated leaf forms; soap tree (*Y. elata*) is a 7-8' plant with creamy-white flowers tinged green to rose.

Native Dryland Wildflowers

- These hardy perennials are a great start to a successful Great Plains style garden. Most are native to dry, rocky soils at lower elevations or dry upland prairies making them a perfect choice for the Great Plains gardener. Xeric or dryland plants like to grow in infertile soil and will perform best when provided with a raised planting bed. Mix equal parts topsoil, sharp sand and gravel and compost; also work this mix into the existing soil to provide the well-drained soil they require; use a light layer of gravel mulch on dryland garden for topdressing: to provide a nice, uniform cover; xeric plants like to reseed in this mulch; weeding is easy by cutting the young weeds with a hoe just under the mulch. A light layer of wood chips is fine but excess mulch will hold too much moisture for these plants and they can crown rot. Once established water only during drought conditions-every three weeks or so if no rainfall. All need full sun.

Artemisia, fringed – *Artemisia frigida* – soft, silver-gray foliage with arching stems growing to 30" h.; a must for the hot, sunny border; needs a well-drained site for best performance; cut back after flowering for a new flush; a native similar to 'Silver Mound'.



Aster 'My Antonia'- pure white flowers with yellow centers in fall on 12" plants with glossy dark green leaves; pinch in late spring to encourage compact habit and more flowers; tough as nails.

Aster, Aromatic- (*Aster oblongifolius*) mounded form with narrow leaves covered with sky blue flowers in fall; native to dry, upland prairies; great combined with little bluestem and goldenrods; spreads by rhizomes; 2' high; pinch in early summer to prevent flopping; 'October Skies' is nice.

Aster, smooth – *Aster laevis* – 3½' h. native with narrow leaves; covered with masses of sky blue flowers in fall; 'Bluebird' has large, cone-shaped clusters of violet-blue flowers with golden centers; tolerates a wide range

of moisture levels and soil types; does not require staking.

Black-eyed Susan (*Rudbeckia* species) showy yellow daisy-like flowers with black center cones in summer; native *R. hirta* is a 2' annual that will reseed itself; *R. missouriensis* a 18" high perennial with fuzzy leaves, most drought tolerant; easy to grow and very adaptable

Bush Morninglory (*Ipomoea leptophylla*) bush-like 2-4' wide plant covered with pink morninglory-like flowers in summer; must have excellent drainage and best in pure sand; incredibly drought tolerant.



Clematis, Fremont's (*Clematis fremontii*) non-vining or bush type clematis quickly emerging to 15" in early spring; urn-shaped nodding flowers appear in late April followed by silky seedheads; needs dry, well-drained site and several years to reach maturity; long lived if planted where it's happy.

Compass Plant (*Silphium laciniatum*) robust, oak-like leaves on this long-lived classic; sends up a 4-7' flower stalk with many bright yellow sunflowers in fall; best planted with the prairie sky behind.

Coneflower, Narrowleaf (*Echinacea angustifolia*) narrow, rough textured foliage; pink to creamy white flowers with drooping petals in late spring; blooms 2-3 weeks earlier than 'Magnus'; drought tolerant

Coneflower, Pale (*Echinacea pallida*) very narrow, rough textured foliage; pink to creamy white flowers with wispy, drooping petals in late spring; very drought tolerant; western Nebraska native.

Coreopsis, Lance-leaf (*Coreopsis lanceolata*)- easy to grow, hardy perennials for hot, sunny border; grows best in well-drained soil; golden yellow daisies in summer; drought tolerant; cut back hard after flowering for new flush.

Coreopsis, threadleaf - *Coreopsis verticillata* - fine, thread-like leaves create an airy quality for this 1-3' h. plant; starry, butter-yellow flowers bloom in masses throughout the summer; grows best in rich, well-drained soil, drought tolerant once established; 'Moonbeam' has pale yellow flowers; 'Zagreb' is a compact 15" plant.

Flax, blue - *Linum perenne* - azure blue flowers emerge in spring on 18" wiry stems and needle-like leaves, making the blooms appear to be floating from a distance; prune back after

flowering; will not return if winter drainage is poor; 'Lewisii' is a light blue native flax; 'Album' is white flowered.

Gayfeather or Liatris- dotted gayfeather, *Liatris punctata* has lavender spikes, blooms in September; *L. aspera* or rough gayfeather has lavender buttons along stems; drought tolerant and well-drained soils.

Goldenrod – Solidago spp. – showy golden-yellow plumes from late summer-fall; combines well with grasses; easy-to-grow perennials botanically cannot cause hay fever; 'Golden Fleece' (*S. sphacelata*) grows 15-18" h.; showy goldenrod (*Solidago speciosa*) is outstanding and well-behaved in the garden.

Indigo, Dwarf Blue (*Baptisia minor*) gray-green usually 3-parted leaves with spikes of pea-like, rich blue flowers in spring; 2-3' high; full sun, deep soils; slow to establish but will live many years.

Indigo, White Wild (*Baptisia lactea*) stately 3-4' native with showy spikes of snow-white flowers in spring followed by attractive seed pods; tough, drought tolerant for full sun;

Leadplant – *Amorpha canescens* – native shrubby plant with small gray-white leaves forming 4' h. bushy plants; topped with rich, blue-purple flower spikes in early summer; very drought tolerant; prune hard in early spring for compact growth; Fragrant False Indigo or *Amorpha nana* – tiny, grayish leaves form a bushy 2' plant;

attractive pink flower spikes with a honey fragrance; tough and drought tolerant native; a gem for the rockery.

Leadplant, Dwarf (*Amorpha nana*) this slow growing cousin of leadplant takes three years to reach maturity; worth the wait with loads of pink spikes in late spring with a nice fragrance; 1-3' high.



Milkweed, Butterfly (*Asclepias tuberosa*) vibrant orange flowers top 2' tall plants in late spring; ornamental seed pods; plant in late spring and water sparingly to establish; needs good drainage

Mountain Mint – *Pycnanthemum virginianum* – fragrant minty foliage forms bushy 2' h. plants; white or lavender flowers spotted with purple top the plants in summer; easy to grow, does not spread by runners; pinch for compact habit.

New Jersey Tea (*Ceanothos americanus*)- Handsome, durable shrub with clean foliage and abundant clusters of white flowers in late spring; slow to establish but worth the wait; limit competition from aggressive plants; dried leaves make an excellent prairie tea.

Poppy Mallow, Purple (*Callirhoe involucrata*)- low growing cut-leaf native to 12" tall and 4' wide; dies back to crown each year; bright purple cup-shaped flowers all summer; easy to grow and drought tolerant.



Prairie Coneflower, Roundheaded (*Ratibida pinnata*) elegant deep yellow, drooping petals surrounding a dark brown cone-like center; *R. pinnata* to 4-5' and somewhat of a nuisance seeder; *R. columnifera* is a more compact 2' high plant that is short-lived but will perpetuate if allowed to reseed; full sun.

Primrose, Missouri (*Oenothera macrocarpa*)- lance-shaped silvery leaves on sprawling plants to 2' wide; large light yellow flowers in summer; large, winged seed capsules; tough, carefree plant; 'Comanche Campfire' was selected for its silvery foliage and reddish stems.



Pasque Flower (*Pulsatilla species*) western native with silky hairy leaves; delicate cup-shaped flowers in early spring followed by feathery seed heads; native has lavender flowers; need well-drained, dry soils.

Prairie Clover, Purple (*Dalea purpurea*) erect prairie plant with bright purple cylindrical heads atop thin, stiff stems in summer; fernlike foliage; 'Stephanie' nice compact selection.

Prairie Smoke (*Geum triflorum*) native to the Dakotas; attractive dark green, deeply lobed foliage forms 12" mounds; small, nodding pink flowers in early spring followed by feathery seed heads; wet or dry.

Prairie Ragwort (*Senecio plattensis*) flat-topped clusters of inch-wide heads, in rich, deep yellow in spring;

short-lived but will seed around original plants to form colonies; dry, well-drained soils; 18"

Penstemon, Shell-leaf (*Penstemon grandiflora*)- beautiful late spring blooming perennials with erect flower spikes to 3'; tubular pink, maroon, white or purple flowers and showy seed heads; allow to reseed to perpetuate in the garden; needs sunny well-drained, dry soils; 'Prairie Snow' nice white.

Penstemon, Cobea (*Penstemon cobea*) beautiful summer blooming perennials with erect flower spikes; large, tubular flowers in shades of lavender, pink and rose; showy seed heads; allow to reseed to perpetuate in the garden; needs sunny well-drained, dry soils.



Pussytoes - *Antennaria* sp. - tiny, silver-green leaves in low-growing rosettes are covered with pink-tipped, off-white flowers in early spring; grows well in rock gardens, as it prefers poor soil areas that are dry and sandy.

Rattlesnake Master (*Eryngium yuccafolium*)- impressive gray-green, yucca-like foliage to 2'; flower stalks to 3', topped with honey-scented 1/2" white balls in summer; best with grasses.

Sage, Pitcher (*Salvia azurea*) slender stalks reach 4' in late summer; topped with clusters of azure-blue flowers; pinch in late spring to early summer for compact habit; very drought tolerant but rather lanky.

Skullcap, prairie - (*Scutellaria resinosa*) - 'Smoky Hills' is a native with 4-12" square stems and mouse-eared leaves; deep purple flowers with two white patches are somewhat similar to snapdragon flowers; slightly hairy all over; shear back by 1/2 after flowering for new flush; very drought tolerant.

Spiderwort, Dwarf (*Tradescantia tharpaii*) narrow, hairy leaves emerge early spring to 12"; pastel flowers of deep pink to purple cover plants in May; early summer dormancy to reappear in fall; the prairie spiderwort, *Tradescantia ohioensis* is a lovely lavender colored native to 2' high for dry, sunny sites.

Wild Petunia (*Ruellia humilis*) small petunia-like lavender flowers on 1-2' native; long blooming season.

Wild Senna (*Senna hebecarpa*) fine textured leaves on 4-6' woody stems, topped with yellow pea-like flowers in summer, each with attractive black anthers; easy to grow in full sun; adaptable.

Wild Bee Balm (*Modarda fistulosa*)

aromatic mint-like foliage; upright bushy plants to 4-5' tall; topped with 2" lavender-pink flower clusters in August; drought tolerant.

Xeric Ornamental Grasses for Nebraska

Ornamental grasses are key plants for the garden providing seasonal beauty with colors and textures only they can provide. Ornamental grasses are easy to grow, well adapted to the extremes of the Great Plains climate and offer a huge array of sizes, colors and flowering times. This presentation will highlight some of the best ornamental grasses for Nebraska.

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, Indiangrass, and switchgrass were once key components of the tall grass prairie and thankfully are now also becoming key components in today's urban prairies. Prairie grasses are an ornamental grass too.

Native Grasses

Buestem, 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.



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.

Bluestem, Sand (*Andropogon hallii*) very attractive blue basal foliage with rich red-purple tones in fall; upright flowering stalks in late summer have yellow stem sections; similar to big bluestem but more suited for very dry sites; performs best in full sun; thrives in droughty, windswept sites; very dramatic planted in mass. Silver Sunrise® developed by the GreatPlants for the Great Plains.

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.

Gramma, 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.



Gramma, 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; dry or moist soils

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

Junegrass, Prairie (*Koeleria pyramidata*) dryland native, cool season bunch grass with gray-green leaves; blooms early June with narrow, erect inflorescence; needs

well-drained, dry soils; can be short-lived in heavy soils but will reseed making them ideal for naturalizing; 18" high.



Lovegrass, Sand (*Eragrostis tricooides*) 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

Hardy Exotic Grasses

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.

Fesque, Dwarf Blue (*Festuca glauca*)

Lovely powder blue foliage and dainty flower spikes in early summer; compact size makes it ideal as a border plant or for the rock garden; must have full sun and good drainage to perpetuate in the garden; 'Elijah Blue' holds its color well throughout the season; 12" high.

Ravenna Grass, (*Saccharum ravennae*)

Gray-green basal foliage to 4' by mid-summer; tall 10-12' high creamy-white plumes by late summer; great for tall accent or for a quick screen. Hardy to zone 5.



Giant Sakaton, (*Sporobolus wrightii*)

This southwestern native is also winter hardy to zone 4! Attractive waist high mounds of gray-green foliage by late summer; the feathery, branched seed heads rise to 6' in fall to create a great see-through affect; retains shape through winter with straw-colored leaves; moderately drought tolerant.

Oatgrass, Blue (*Helictotrichon*

sempervirens) A winter-hardy European native; clump-forming grass with intense blue leaves to 2'; delicate flower stalks appear in late spring; Prefers full sun and good air movement to resist any foliar rust; requires well-drained soil for long life; suffers in poorly drained soils; outstanding silver-blue is unrivaled among grasses.

Pennisetum, Chinese (*Pennisetum*

alopecuroides) Narrow-leaved bunch grass with foxtail-like silvery-white plumes in late summer; Green foliage mounds turn golden yellow in autumn and remain attractive all winter; typically 2-3' high; stunning in groups or masses; native to China.

Plants for Dry Shade

- **These perennials tolerate dry shady conditions but still perform best with consistent moisture. They compete well with roots of trees for moisture and will also grow well in part shade. Provide a humus-rich soil by working copious amounts of organic matter into the soil.**

Anemone, Meadow (*Anemone canadensis*)

attractive broad leaves forms dense 18" carpet of leaves topped by singular white flowers in late spring; vigorous spreader and needs to be contained; great between large shrubs.

Barren Strawberry (*Waldsteinia ternata*)

native to Siberia; glossy dark

green strawberry-like leaves form 8" mounds of foliage in early spring; yellow flowers in loose clusters in April to May; tough, dependable; nice combined with bleeding hearts.



Bergenia, Heartleaf (*Bergenia cordifolia*) large, glossy dark green leaves with clusters of showy rosy-pink flowers in early spring to 15"; foliage has reddish tones in fall; rich, organic soils.

Bishops Weed (*Aegopodium podagraria*) dense foliated ground cover that spreads aggressively; best confined to restrict growth; beautiful creamy-white variegation on leaves; flat-topped white flowers in summer not significant; foliage burns in hot summer months is not provided some shade; 18" h.

Comfrey (*Symphytum grandiflorum*) hairy stems and oval leaves form 15" clumps topped with tubular blue flowers in spring; 'Variegata' has cream and green foliage; 'Hidcote Blue' rich blue selection.

Corydalis lutea- blue-green, fernlike foliage and abundant golden yellow flowers in spring; reliable easy plant for moist or dry shade; will happily reseed in moist gardens; 12-15" high.

Epimedium or Barrenwort- attractive delicate foliage and interesting red or yellow flowers in spring; slow to establish but worth the wait; consistent moisture for best growth.

English Ivy (*Hedera helix*) rich dark green leaves with prominent veins; spreads to form ground cover or climbing vine; can be aggressive in rich, moist soils; plant hardy, drought tolerant selections.

Euonymus, Winter Creeper (*Euonymus fortunei*) classic evergreen ground cover that spreads rapidly; dark green, green & white or green & gold leaves; bright accent for shade; 18" high.

Hosta- tough, lovely plants with blue-green, dark green, variegated or gold leaves that are narrow, broad, wavy or twisted; dwarf forms or giant 3' plants; nice flower spires in summer to early fall.

Lily-of-the-Valley (*Convallaria majalis*)- nice old-fashioned ground cover with lush 8" leaves and arching, one-sided flower stalks with white fragrant blossoms in early spring;

aggressive to plant in a confined space or keep the site dry to deter spreading.



Phlox, Woodland (Phlox divaricata)- showy 2-3" clusters of lilac blue to white flowers in spring on 12" plants; early summer dormancy after scattering seeds; excellent weaver between hostas.

Solomon's Seal (Polygonatum species)- attractive woodland native forms colonies with dark green leaves arranged along arching stems and small, pendulous white flowers hang below the 2-4' stems in spring; variegated forms from Japan are showy and brighten a shady corner of the garden; tolerates wet or dry.



Toadlily (Tricyrtis hirta) forms patches with arching stems and soft, hairy pointed leaves clasp stems; small orchid-like spotted flowers open in fall; moist fertile soil is ideal, but they tolerate dry shade.

Variegated Bishop's Weed (Aegopodium)- lovely variegated leaves bear white flat-topped flowers in summer; an aggressive groundcover but dry soil will help keep it at bay; great filler between large shrubs; 18" h.

Vinca (Vinca minor) glossy, evergreen leaves are dark green, variegated white or gold forming dense ground cover; blue, white or purple flowers in early spring; aggressive so plant in confined space.

Yellow Archangel (Lamium galeobdolon 'Herman's Pride') handsome foliage with dapples of silver on dark green leaves forms 10" upright clumps; small yellow flowers whorled around the stems in spring; shear back by 1/2 after flowering.