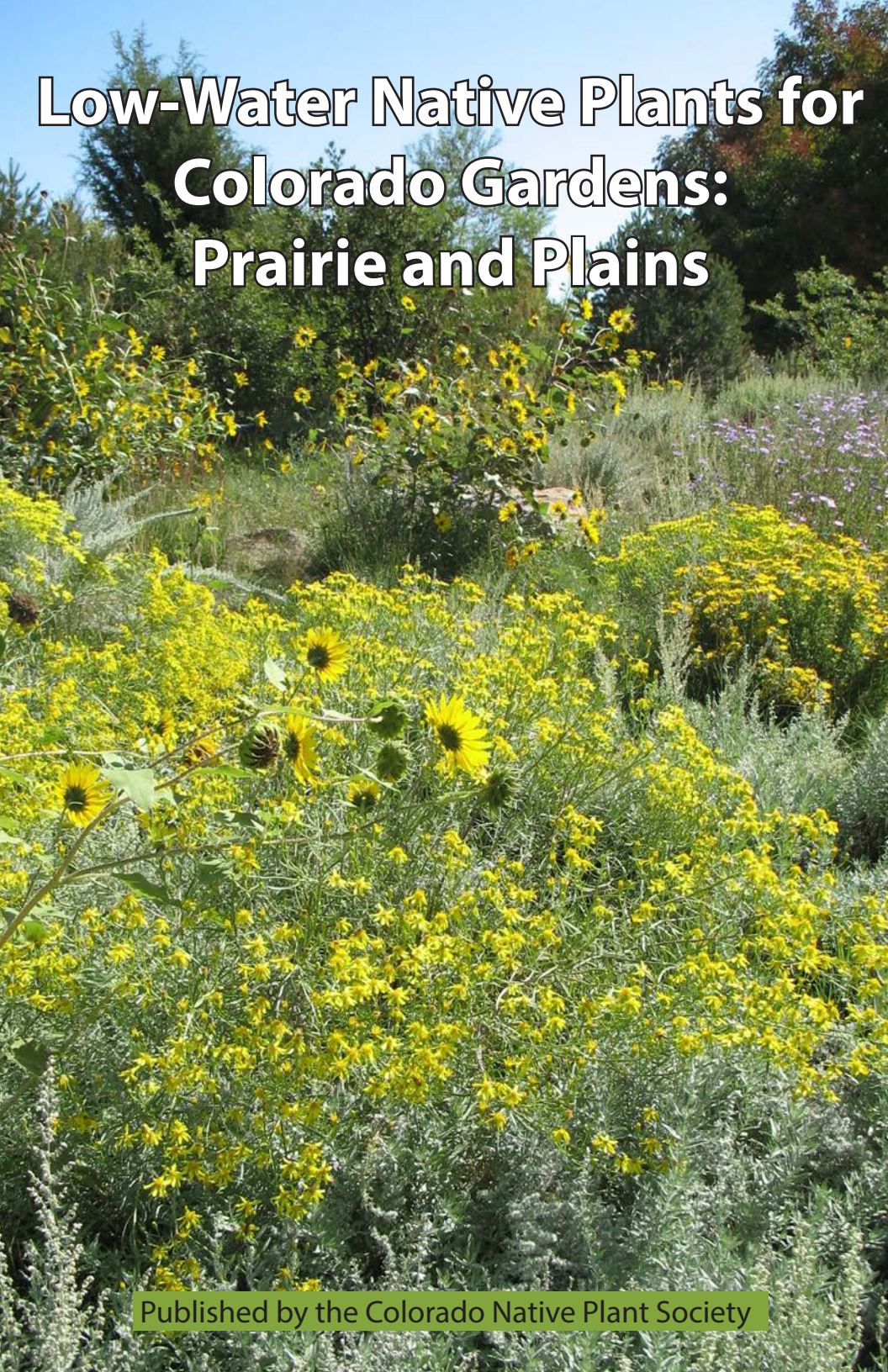
# Low-Water Native Plants for Colorado Gardens: Prairie and Plains



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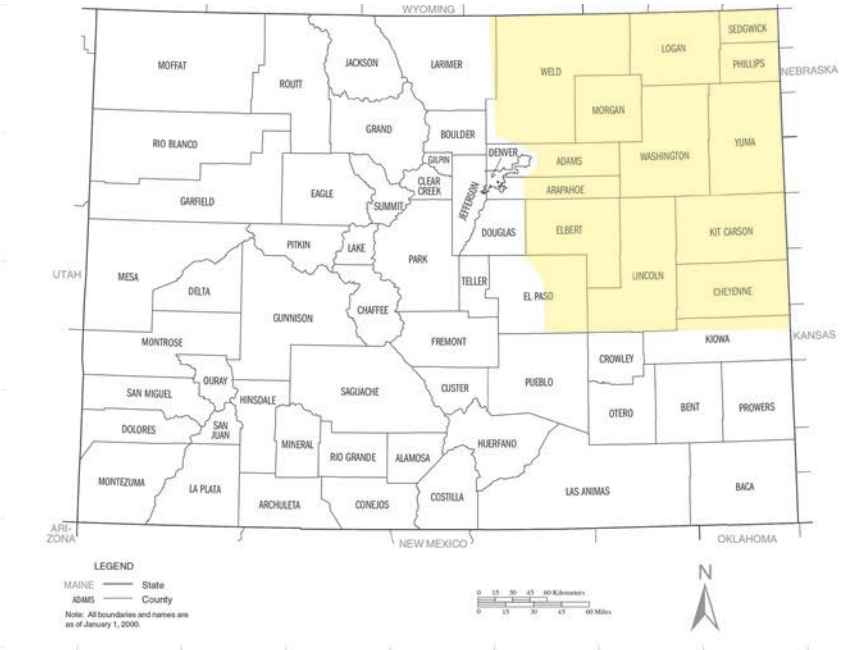
## Prairie and Plains Region




This range map is approximate. Please be familiar with your area to know which booklet is most appropriate for your landscape.

**The Colorado native plant gardening guides cover these 5 regions:**
Plains/Prairie
Front Range/Foothills
Southeastern Colorado
Mountains above 7,500 feet
Lower Elevation Western Slope

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Map: U.S. Census Bureau, Census 2000



Denver Botanic Gardens, Chatfield
Photo by Irene Shonle

## Introduction

This is one in a series of regional native planting guides that are a collaboration of the Colorado Native Plant Society, CSU Extension, Front Range Wild Ones, the High Plains Environmental Center, Butterfly Pavilion and the Denver Botanic Gardens.

Many people have an interest in landscaping with native plants, and the purpose of this booklet is to help people make the most successful choices. We have divided the state into 5 different regions that reflect different growing conditions and life zones. These are: the plains/prairie, Southeastern Colorado, the Front Range/foothills, the mountains above 7,500', and lower elevation Western Slope. Find the area that most closely resembles your proposed garden site for the best gardening recommendations.

## Why Native?

There are many benefits to using Colorado native plants for home and commercial landscapes. They are naturally adapted to Colorado's climates, soils and environmental conditions. This means that by choosing native plants gardeners can work with nature, rather than trying to grow plants that are not suited to our local conditions and may prove to be difficult to work with.

When correctly sited, natives make ideal plants for a sustainable landscape. Native species require less external inputs such as water and fertilizer, and are more resistant to pests and disease when the planting site mimics the plant's native habitat. Landscape water use accounts for about 55 percent of the residential water used across the state of Colorado, most of which is used on turf. Planting less-thirsty natives could lessen the burden on our water systems.

Another great reason to go native is to restore habitat. Rapid urbanization in the state is reducing biodiversity (the number of different species found in a given area) as habitat is removed for building and road construction. Research has shown that landscaping with natives on a large or small scale, helps maintain biodiversity that otherwise would be lost to development. Thousands or millions of gardens planted with natives, even in urban areas can provide food, shelter and other important resources for wildlife, including mammals, birds and native pollinators.

Growing native plants does not exclude using adapted non-native plants. There are many non-native plants that are adapted to Colorado's climate and can be used in a native landscape as long as moisture, light and soil requirements are similar. Even if a site has a non-native landscape that requires additional inputs (such as an irrigated landscape on the plains), dry-land native plants can be used in non-irrigated pockets within the non-native landscape. These native "pocket gardens" can be located in areas such as median strips and next to hardscapes that are difficult to irrigate. Note that in years with less than normal rainfall, non-irrigated landscapes may suffer in appearance without supplemental water.

Gardening with native plants also prevents the introduction and spread of noxious weeds. Many noxious weeds were intentionally introduced as garden plants that belatedly were found to escape the confines of the garden and crowd out native plants.

Some communities regulate landscape appearance or the type of plants which may be used. Before initiating any new landscape design, check with local municipalities and/or homeowners' associations to discover any regulations that may affect your design.

Finally, using native plants in landscapes helps provide a special sense of place, celebrating Colorado's uniqueness and beauty, rather than a generic landscape. A garden with native plants feels more harmonious with its surroundings than a landscape transplanted from another locale.



## Native Plant Gardening on the Eastern Plains

The Great Plains sweep across the eastern third of Colorado and historically included Denver, Aurora and many other Front Range cities. The eastern plains are a semi-arid climate, receiving only 12 – 14 inches of precipitation annually. Prairie plants have adapted to thrive in spite of the harsh winds, bright sun and periodic droughts. The soils range from clays to more loamy soils to sandy, gravelly areas.

Prairie Garden, Denver Botanic Gardens
Photo by Irene Shonle

Much of the eastern plains of Colorado are covered with short-grass prairie, dominated by grasses that are less than two feet tall. Taller grasses of the mixed-grass prairie appear in wetter swales and cottonwood forests spring to life along riparian areas. If you drive across the plains at 65 miles per hour, you will miss the beauty and diversity of the wildflowers and wildlife that blanket the ground. The majority of plants are perennials that have adapted by sending their roots deep underground to capture moisture and survive grazing by bison, pronghorn and prairie dogs. When the conditions are right, they burst forth with amazing colors and variety.

## Culture and Maintenance

### Soils

Colorado soils, on average, are fairly low in organic matter and high in pH (alkaline). The good news is that native plants usually can be successfully grown in unamended soils. This is because natives do not require nutrient rich, high organic content soil, and can often become overgrown or short lived in such soils. Many native plants, especially those from prairies or the Front Range, will thrive in clay soils. However, some native plants require well-drained soils. To amend clay soils, add 10 percent compost and 15 percent small aggregate (i.e., pea gravel) by volume to clay/clay loam and incorporate into the root zone. Creating a small berm and planting on the top can also be helpful to improve drainage. To amend excessively well-drained sandy or rocky soils, add 3 percent compost by volume. It may be beneficial to test the soil before planting, especially on a larger project. Soil testing kits are available at your local CSU Extension office.

### Maintenance

Native plants often do not need much maintenance; just the usual pruning of dead or diseased material, and cutting back perennials in the spring. Leaving seed heads on the plants in the fall will not only provide a feast for birds, and protect caterpillar eggs and chrysalises, but will increase plant hardiness and winter interest. Native plants typically do not require fertilizer. Some tasks, such as weeding and deadheading, require the same time investment for native plant gardens as for gardens with non-natives.

### Watering

Plants will need to be watered for at least the first season, with the most critical time being the first three weeks after planting. Once they are established, water can be cut back gradually. After establishment, some natives can be taken off irrigation completely.

Place plants that have higher water needs nearer the house or other highly used areas. These plants can also be planted in swales (lower areas), or near downspouts for passive water harvesting.

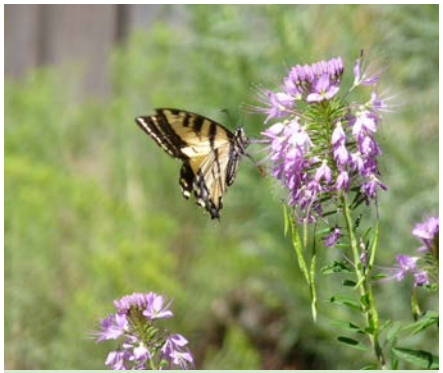
### Limiting/reclaiming turf areas

Although grass lawns are popular, they generally use more resources like water, fertilizers, pesticides, and maintenance (mowing) than a landscape of native plants. Lawns also provide no habitat for pollinators and birds. Native landscapes, on the other hand, are less resource intensive, provide habitat and provide more interest and color. Consider either limiting grass lawns to play, pet, or entertaining areas, or replacing lawns altogether if these spaces are not needed.

To reclaim a space formerly devoted to a lawn, spend some time eradicating all grasses and weeds. Grass is easier to kill when it is green and actively growing in the spring or fall. There are a few options for this. One is to use a glyphosate-based herbicide, another is to cut out all the sod, and a third is to solarize the area. Solarization works best in the heat of the summer in full-sun areas.

Mow the area and remove the clippings, water, place clear plastic on top (burying the edges with soil) and leave it for 4-6 weeks. A final option is to sheet mulch. Cover the area with sheets of cardboard or 12 layers of newspapers. Overlap these materials at least 6 inches so no light penetrates and wet them down to keep them in place. Place 1 inch of compost on top of the barrier layer. Add at least 6 inches more of mulch or compost (grass clippings, straw or leaves). As these materials break down, they will create a rich humus layer while keeping weeds down. Allow at least 4-6 weeks.

This lawn is being smothered by layers of newspapers covered with several inches of mulch (created from a dead tree that was ground up). Photo by Jan Turner



Butterfly on Rocky Mountain bee plant *(Cleome serrulata)*. Photo by Jan Turner.

## Wildlife & Pollinators

Providing habitat for songbirds and pollinators is one of the great pleasures of gardening with native plants. To maximize habitat for pollinators, plant a diversity of plants, and aim to provide the longest possible season of bloom.

Many plants will provide nectar for adult insects, but consider

the larval stage in planting too. Most native insects have specialized relationships with native plants, and require specific plants to grow from egg to adult. As an example, many butterflies will sip nectar from non-natives, but the eggs need to be laid on specific plants or the caterpillars won't recognize the plant as food. Purchase pesticide-free plants. There has been recent concern that neonicotinoids are harmful to bees, so look for neonic-free plants.

Birds use native plants for food and shelter, but insects are an overlooked and crucial part of many bird's diets. Far more insects will develop on native plants than exotics, providing food for birds during the critical nesting season. Consider planting a 'thicket' of berry-producing shrubs. If planted in the direction of the prevailing wind, this thicket can also provide a space of calm air for butterflies.

Rick Brune's Garden
Photo by Irene Shonle

## Inventory Your Yard & Microclimates

For the best garden, spend some time in the planning stage. Identify where you would like to create a new bed, or replant an existing one. Inventory the areas in your yard for sun and shade, and for areas where moisture accumulates. Consider what areas have easiest access from the house, and if there are views you would like to enhance or block. All of these factors create what are known as *microclimates* or small, but potentially significant changes in the immediate environment that will affect your plants. Knowing these ahead of time will help you make the most of your site and can guide your plant choices.

## Design for Low Maintenance

Native plants can be used to accomplish just about any design style you're looking for using the elements and principles of good design: color, texture, balance, unity, variety, rhythm, line, form, scale. They can be used for anything from formal designs to the more informal naturalistic plantings that most people think of when they think native.

Choose species based on the soil, light and water conditions of your site and for the size, shape, texture, and color desired. For a more natural, successful and easily maintained landscape, group species that grow together naturally and have the same cultural requirements. This will improve plant health and appearance and will minimize maintenance.

South-facing areas with reflected heat, will do best with dryland or desert plants. North-facing areas are cooler, moister and shadier, and will do better with forest-edge type plants. West-facing areas are more similar to south-facing, even if they only get a half day of sun, so this is a good spot for dryland, prairie, or chaparral plants. The east-facing side is usually the most benign, and can grow a wide variety of plants.

Plants that have higher water needs should be placed near the house for easier watering, or near downspouts or in low-lying areas where they will get extra water.

Denver Botanic Gardens, Chatfield
Photo by Irene Shonle

Be sure to be vigilant for weeds, especially in the first few years of planting, so they don't take over the desirable vegetation. Plant thickly enough that the plants become a living mulch.

## Suggested Reading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**Items available from the CoNPS Store at the time this booklet was published are marked with an asterisk. Others may be out-of-print and can be obtained from Amazon or the public library.*

## Plant List

The plants for each of these guides were selected by experienced gardeners, with further input from members of the Colorado Native Plant Society. We aimed to choose plants that would be relatively easy to find in nurseries and seed catalogs. The scientific names are from Jennifer Ackerfield's *Flora of Colorado* (Britt Press, 2015); synonyms are in parentheses. For a listing of nurseries and seed companies that carry native plants, look for the "Native Plant Vendors" list on the Colorado Native Plant Society (CoNPS) website at http://conps.org/gardening-with-native-plants/ or consider attending the native plant sales held by CoNPS. When you go to a nursery, be sure to have the scientific name with you to make sure you are purchasing the correct species. Don't forget to ask for pesticide-free plants so pollinators won't be harmed.



**Colorado Native Plant Society Mission Statement**

The Colorado Native Plant Society is dedicated to furthering the knowledge, appreciation and conservation of native plants and habitats of Colorado through education, stewardship and advocacy.

Visit CoNPS website at http://www.conps.org

**Key to Chart**

The chart on the following pages contains a list of plants, *listed alphabetically by scientific name (column 2 of the chart)*, that are native to Colorado and do well in plains and prairie gardens. The scientific names are from *Flora of Colorado* by Jennifer Ackerfield. Not all plants illustrated in this guide are listed in the chart, but the scientific names are given so you can find them in a nursery. Synonyms are listed in parenthesis. If you have questions, contact CoNPS or one of the other organizations that collaborated to produce this guide.

frt/birds, wl = fruit for birds and wildlife
hp = host plant-name
n/hb = nectar for hummingbirds
n/hm = nectar for hawkmoth
np/bee, btf = nectar and pollen for bees and butterflies
np/bee, btf, o = nectar and pollen for bees, butterflies, and other pollinators
p/bees = pollen for bees
s/birds = seeds for birds
sh/birds = shelter for birds
ssh/birds = seeds and shelter for birds

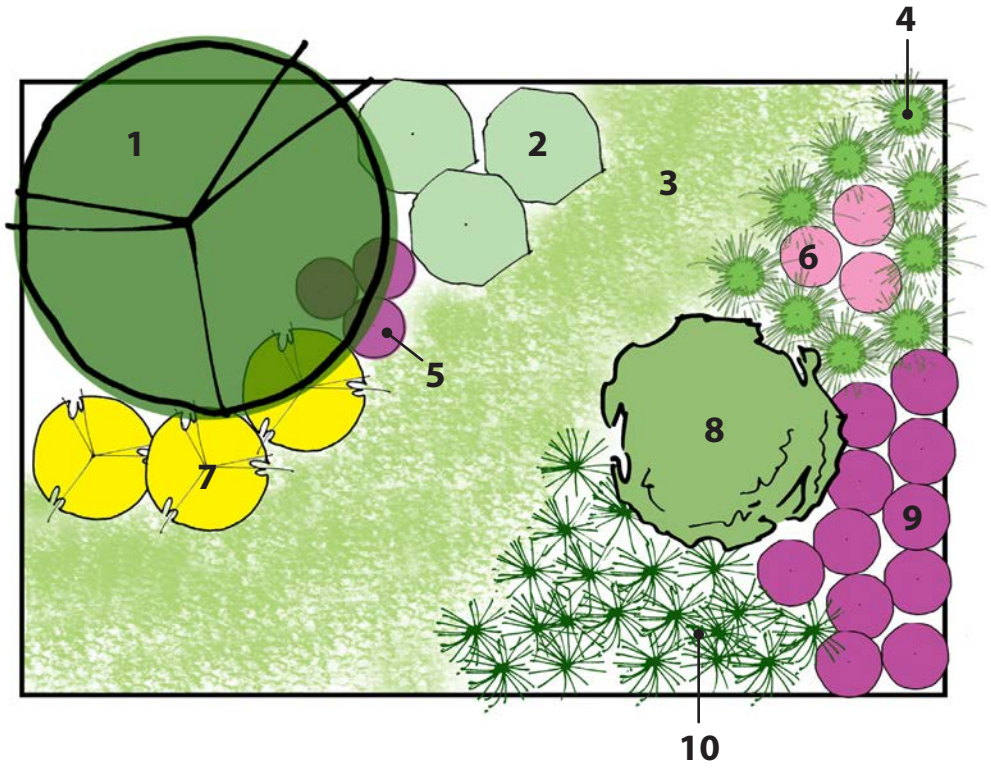
Bloom Time:
spring = SP
summer = S
fall = F

| Common Name | Scientific Name | Mature Size | | Water | Exposure | Flower Color | Bloom Time | Wildlife Value |
|---|---|---|---|---|---|---|---|---|
| **GROUNDCOVERS** | | | | | | | | |
| Wine Cups | *Callirhoe involucrata* | 36″ x 12″ | | low | sun | magenta | S-F | np/bee, btf, o; hp-Fritillary larvae |
| Prairie Verbena | *Verbena bipinnnatifida (Glandularia bipinnatifida)* | 6″ x 12″ | | low | sun | purple | S | np/bee, btf |
| Prairie Zinnia | *Zinnia grandiflora* | 6″ x 12″ | | low | sun/part shade | yellow | S | np/bee, btf, o |
| | | | | | | | | |
| **PERENNIALS** | | | | | | | | |
| Nodding Onion | *Allium cernuum* | 12″ x 6″ | | medium | sun/part shade | pink | S | np/bee, btf, o |
| Fringed Sagebrush | *Artemisia frigida* | 12″ x 18″ | | low | sun | grey green foliage | S | np/bee; ss/birds |
| Swamp Milkweed | *Ascepias incarnata* | 24″ x 48″ | | medium | sun | pink to purple | S-F | np/bee, btf, o; hp-Monarch larvae |
| Showy Milkweed | *Asclepias speciosa* | 30″ x 12″ | | medium | sun | pink | S | np/bee, btf, o |
| Purple Prairie Clover | *Dalea purpurea* | 24″ x 18″ | | low | sun | purple | S | np/bee, btf |
| Wallflower | *Erysimum capitatum* | 18″ x 18″ | | low | sun/part shade | yellow | S | np/bee, btf |
| Maximilian's Sunflower | *Helianthus maximiliani* | 48″ x 48″ | | low | sun | yellow | S | np/bee, btf; s/birds |
| Hairy Golden Aster | *Heterotheca villosa* | 12″ x 18″ | | low | sun/part shade | yellow | S-F | np/bee, btf, o |
| Gayfeather | *Liatris punctata* | 24″ x 12″ | | low | sun | pink to purple | S-F | np/bee, btf |
| Tansy Aster | *Machaeranthera canescens* | 24″ x 12″ | | low | sun/part shade | purple | S-F | np/bee, btf, o |
| Colorado/Showy Four O'Clocks | *Mirabilis multiflora* | 12″ x 30″ | | low | sun/part shade | magenta | S | n/hm, hb |
| Bee Balm | *Monarda fistulosa* | 24″ x 24″ | | low/med | sun/part shade | pink to lavender | S | np/bee, btf, hb |
| Tufted Evening Primrose | *Oenothera caespitosa* | 6″ x 12″ | | low | sun | white | S | n/hm; hp-Hawkmoth larvae |
| Prickly Pear Cactus | *Opuntia polycantha* | 8″ x 12″ | | low | sun | yellow to orange | SP | np/bee, hb |
| Narrow-leaved Penstemon | *Penstemon angustifolius* | 18″ x 12″ | | low | sun | sky blue | SP-S | np/bee, btf, hb |
| Large-flowered Beardtongue | *Penstemon grandiflorus* | 30″ x 12″ | | low | sun/part shade | lavender | SP-S | np/bee, btf, hb |
| Prairie Coneflower | *Ratibida columnifera* | 24″ x 18″ | | low | sun | yellow | S-F | np/bee, btf, o |
| Spiderwort | *Tradescantia occidentalis* | 12″ x 12″ | | low | sun/part shade | purple | S | np/bee, btf |
| **GRASSES** | | | | | | | | |
| Indian Ricegrass | *Achnatherum (Oryzopsis) hymenoides* | 24″ x 12″ | | low | sun | sage-green foliage; tan in winter | S | s/birds; hp-Skipper larvae |

| Common Name | Scientific Name | Mature Size | | Water | Exposure | Flower Color | Bloom Time | Wildlife Value |
|---|---|---|---|---|---|---|---|---|
| **GRASSES** | | | | | | | | |
| Sideoats Grama | *Bouteloua curtipendula* | 24″ x 12″ | | low | sun | bluish-green foliage | S-F | s/birds; hp-Skipper larvae |
| Buffalograss | *Bouteloua dactyloides* | 3″ x 12″ | | low | sun | bluish-green foliage | S-F | s/birds; hp-Skipper larvae |
| Blue Grama | *Boutleloua gracilis* | 14″ x 12″ | | low | sun | bluish-green foliage | S-F | s/birds; hp-Skipper larvae |
| Little Bluestem | *Schizachyrium scoparium* | 24″ x 18″ | | low | sun | bluish foliage SP/S; reddish in winter | S-F | s/birds; hp-Skipper larvae |
| Indian Grass | *Sorghastrum nutans* | 48″ x 24″ | | low | sun | bluish-green foliage | S-F | s/birds; hp-Skipper larvae |
| Prairie Dropseed | *Sporobolus heterolepsis* | 24″ x 24″ | | low | sun | tan/bronze | S-F | s/birds; hp-Skipper larvae |
| | | | | | | | | |
| **SHRUBS** | | | | | | | | |
| Sand Sagebrush | *Artemisia filifolia (Oligoporus filifolius)* | 24″ x 12″ | | very low | sun | silver-blue foliage | S | p/bees; ss/birds |
| Winterfat | *Krascheninnikovia lanata* | 24″ x 24″ | | low | sun | white | S-F | ss/birds |
| Rabbitbrush | *Ericameria nauseosa ssp. nauseosa (Chrysothamnus nauseosus var. nauseosus)* | 5′ x 5′ | | low | sun | yellow | S-F | np/bee, btf, o; hp-Checkerspot larvae |
| Western Sandcherry | *Prunus pumila var. besseyi* | 4′ x 4′ | | low | sun | white | SP | np/bee; frt/birds, wl |
| Golden Currant | *Ribes aureum* | 5′ x 4′ | | low | sun/part shade | yellow | SP | np/bee, btf, o; frt/birds, wl |
| Wax Currant | *Ribes cereum* | 4′ x 3′ | | low | sun | pink to white | SP | np/bee, btf, o; frt/birds, wl |
| Western Wild Rose | *Rosa woodsii* | 3′ x 4′ | | low/med | sun/part shade | pink | SP-S | np/bees, btf, o; frt/birds |
| Yucca | *Yucca glauca* | 3′ x 1 ′ | | low | sun | white | S-F | frt/mammals; hp-Yucca moth |
| | | | | | | | | |
| **TREES** | | | | | | | | |
| Box Elder | *Acer negundo* | 25′ x 20′ | | low | sun | inconspicuous | SP | sh/birds |
| Plains Cottonwood | *Populus deltoides* | 100′ x 45′ | | medium | sun | inconspicuous | SP | sh/birds, o; hp-Mourning Cloak btf larvae |
| Wild Plum/ American Plum | *Prunus americana* | 15′ x 8′ | | low | sun/part shade | white | SP | np/bees; frt/birds, wl |
| Chokecherry | *Prunus virginiana (Padus virginiana)* | 15′ x 8′ | | low | sun/part shade | white | SP | np/bees; frt/birds |

# Landscape Design #1

This design provides a sustainable lawn effect given by the use of buffalo grass through the middle. On either side, native plants are featured which appeal to pollinators and wildlife. Year round interest and texture are key points of this bed. This garden is low maintenance, and loaded with structure and complementary forms and textures to enjoy while walking barefoot through the incomparably soft buffalo grass. Plan on enjoying watching birds and bees while you're not watering! *Garden Design by Nick Daniel*




0′ 5′

*Numbers on design correspond to plants listed*

**1.** American Plum
*Prunus americana*

**2.** Winterfat
*Krascheninnikovia lanata*

**3.** Buffalograss
*Bouteloua dactyloides*

**4.** Blue Grama
*Boutleloua gracilis*

**5.** Gayfeather
*Liatris punctata*

**6.** Large-flowered Beardtongue
*Penstemon grandiflorus*

**7.** Prairie Coneflower
*Ratibida columnifera*

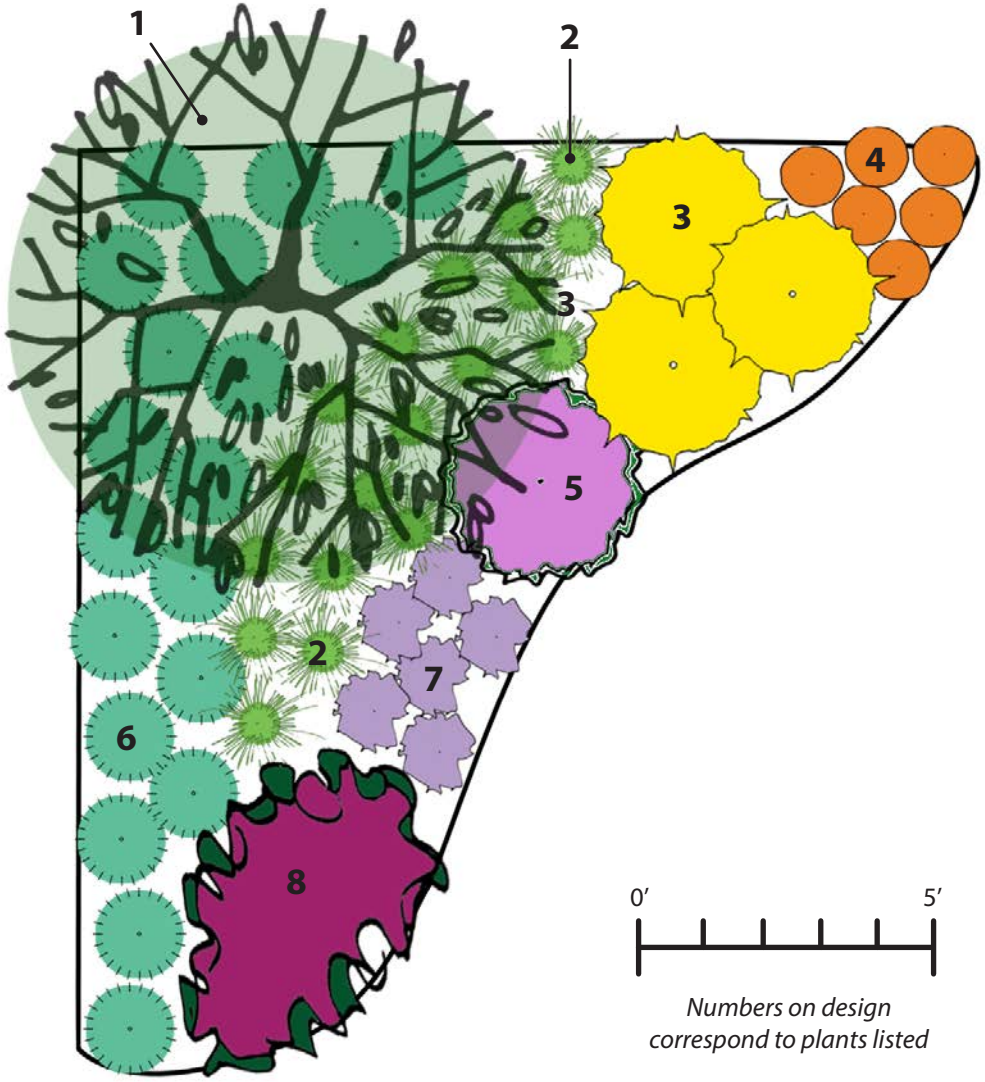
**8.** Western Sandcherry
*Prunus pumila var. besseyi*

**9.** Purple Prairie Clover
*Dalea purpurea*

**10.** Prairie Dropseed
*Sporobolus heterolepis*

# Landscape Design #2

This simple design will appeal to gardeners who like easy, low maintenance gardens. The *Penstemon grandiflorus* will seed nicely throughout the grasses, providing rich spring and early summer color complimented by the bluish hues of the little bluestem. The winecups and *Mirabilis* will creep nicely along the front of the border and will provide flowers from summer-fall. The Maximillian sunflower and milkweed will provide color and structural interest as well as serve as food for wildlife. As the seasons progress, so will this design as the grasses begin to flower and the little bluestem takes on its characteristic red hues. Little to no water will be required after establishment.
*Garden Design by Nick Daniel*




*Numbers on design correspond to plants listed*

**1.** Box Elder
*Acer negundo*

**2.** Blue Grama
*Bouteloua gracilis*

**3.** Maxmillian's Sunflower
*Helianthus maximiliani*

**4.** Butterfly Milkweed
*Asclepias tuberosa*

**5.** Colorado Four O'Clock
*Mirabilis multiflora*

**6.** Little Bluestem
*Schizachyrium scoparium*

**7.** Large-flowered Beardtongue
*Penstemon grandiflorus*

**8.** Wine Cups
*Callirhoe involucrata*




DENVER BOTANIC GARDENS



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