

PLANTS WITH ALTITUDE

Regionally Native Plants for Wyoming Gardens

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Back cover photo:

Seed heads of prairie smoke glimmer in the sun. Photo: Dorothy E. Tuthill

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Photo: Jennifer S. Thompson

The impetus for this publication came from our appreciation for the many native plants we see while on hikes and excursions around our region and that grow in our yards and those of other gardeners. These tough, well-adapted plants ask for very little other than an understanding of their preferred growing conditions, which take little effort to provide. They often require less water and don't need the soil amendments that so many fussier plants demand. In return, they provide a beauty in the garden that can be subtle and supportive or flashy and dramatic, depending on the species. These sometimes under-appreciated garden gems could play a much larger role in gardeners' yards, and the descriptions and pictures provided here are intended to entice readers to give them a try.

In addition to all their other great attributes, growing native plants in the home landscape can increase a gardener's appreciation and understanding of the natural world around us. Although taken out of their natural context in which they have complex relationships with native flora and fauna, native plants in a garden provide gardeners an opportunity to observe up close their remarkable adaptive traits and their relationships with pollinators. Just as native plants are well adapted to the climate, elevation, latitude, and other challenging factors for Wyoming gardeners, native pollinators (bees, butterflies, hummingbirds, flies, beetles, and more) are perfectly built for the environment and the plants of Wyoming. Pollinators move pollen grains from one flower to another, making fertilization, seed production, and seed dispersal possible. Without pollinators, we would face a world without many flowers—and without many of the foods that sustain us.

A native plant garden, containing a smorgasbord of flowers tailored toward the needs of native pollinators, will provide rewarding experiences for the pollinators and the gardener who wishes to foster them in his or her yard. Depending on the species planted, native plant gardens will soon be buzzing with the sounds of bees going about their business, and a hummingbird feeder may become neglected when those birds discover the colorful blooms of penstemons.

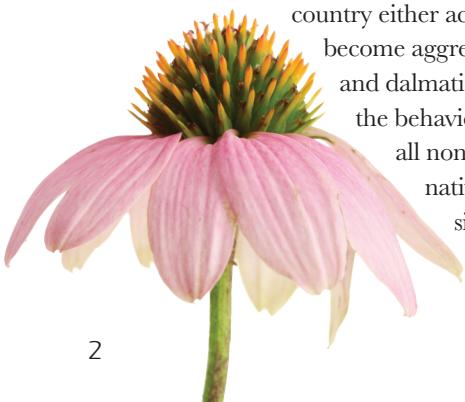
What's native?

All plants are native to somewhere, so it's important to define what native means in this context. Limiting the definition to 'within-Wyoming' would eliminate many desirable plants that approach Wyoming's borders and do well in Wyoming gardens. Such a definition might also imply that any plant that grows in Wyoming will be a perfect plant in every garden across the state—a statement we know to be untrue. Wyoming geography encompasses a wide range of climates; a plant native to the wetter mountains in northwest Wyoming may do poorly on the dry, windswept plains of the southeast (where a native Colorado plant may do well). For the purposes of this publication, we use a wider geographic region encompassing much of western North America as our source of native plants, but we have also noted those that are native to our state.

Aligning expectations with plant behavior makes for a happier gardener.

Gardening with native plants requires that one has realistic expectations about how they will perform in the garden. (One can argue that any type of gardening in Wyoming is much more rewarding if the gardener adopts realistic expectations.) Many of these plants are short-lived perennials; they move about by reseeding, and therefore the landscape will not be static. This element of surprise can be viewed as an opportunity to investigate how new plant combinations look in a garden. It can also require a firm hand when deciding to remove errant seedlings (which can be an easy source of plants for sharing with like-minded gardeners).

Gardeners are probably aware of non-native plants that were brought to this country either accidentally or for gardening purposes but have become aggressive colonizers of our landscapes (oxeye daisy and dalmatian toadflax are examples). Just as we don't use the behavior of these few troublemakers to condemn all non-natives, it is important to realize that some native plants can also expose their more aggressive side in cultivated environments. The glowing white blossoms of pale evening primrose



(*Oenothera pallida* Lindl.) may be enticing in their isolated clumps in the semi-arid landscape of the Intermountain West, but invite this species into your garden and it will truly take advantage of your hospitality. When a plant aggressively invades your lawn or hops, skips, and jumps out of the flower bed, consider killing it off—even if it's a native plant. Be extra cautious if you garden near natural areas.

Plants spread by several means, including by underground roots or rhizomes or by reseeding. We have noted in the descriptions if plants are aggressive reseeders. Note that limited reseeding can be a very beneficial attribute for a native plant, especially for short-lived ones. Plants with a relatively short bloom time can be controlled with respect to reseeding by deadheading (i.e., cutting off spent blooms before seeds are set). We have also observed that some plants reseed much more under certain conditions (e.g., some penstemons reseed robustly in gravel mulch, whereas they are less likely to generate offspring in beds mulched with wood chips).

All plants described here will take (and most commonly require) full sun unless otherwise noted. Their water needs will vary depending on the plant and its exposure to sun and wind in the garden and the type of soil and mulch in which it is growing. Most native plants need good drainage, even if water needs are listed as “moist” or “moderate.” Do not assume a native plant is a drought-tolerant plant. Indeed, no plant is drought tolerant until fully established. Even for the hardiest species listed here, plan on watering these plants regularly during their first year after transplanting or longer.

Locating plants for your garden

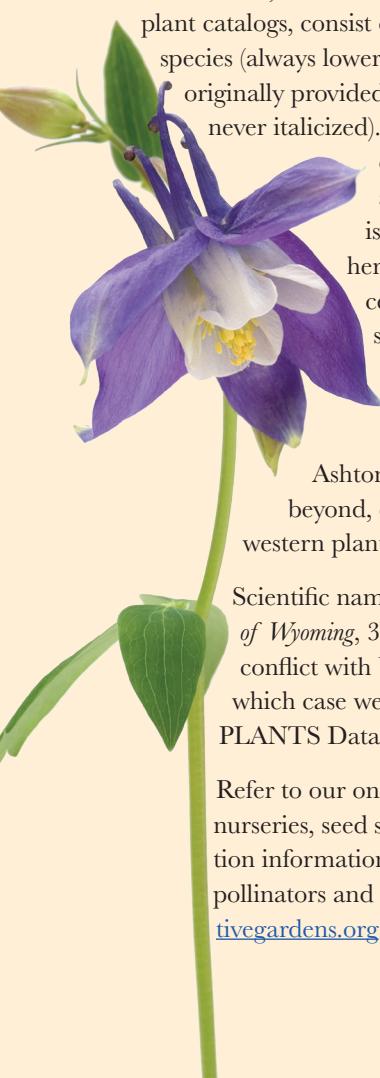
Once you become inspired to try some of these plants, it may take a little effort to track them down. For each listing, we provide guidance as to how easy or hard it might be to purchase these plants. Please note that when we refer to nurseries, we mean regional nurseries and not the big box store garden centers, in which these plants may be rarely found. Contact your local extension office/Master Gardener program to find the names of local nurseries that specialize in or carry native plants. And when hunting down plants in nurseries, don't forget to look in their alpine/rock garden sections (many of these plants hail from the West). In addition, tree and shrub sales through your local conservation district (www.conservewy.com) are often a great way to find native shrubs for conservation purposes.



Photo: Jennifer S. Thompson

A NOTE ON NAMES

Common names are common for a reason—they are easier to use and remember than their scientific counterparts. However, they suffer from the flaw of being regional, local, or even familial, such that miscommunication is common. Scientific names, on the other hand, are global in usage but harder to remember and perhaps intimidating to pronounce. If you are uncomfortable with scientific names, here's a hint: scientific names, though based on Latin or Greek, are pronounced as English words. Therefore, a good approach is simply to sound it out like any other word, and then speak it with confidence. Listeners will be impressed with your boldness and botanical expertise, and friends will imitate your pronunciation.



Scientific names, those italicized (or underlined) two-word names we often see in plant catalogs, consist of the genus (always capitalized and italicized) and the species (always lower case and italicized), plus the name of the person who originally provided the name (called the ‘authority’; often shortened and never italicized). In conversation, you needn’t include the authority (so don’t bother to learn that part), but, when written, the authority’s name is included the first time the species is mentioned. Two authorities encountered frequently here and elsewhere are L., for Carl Linnaeus, the 18th century taxonomist who invented the nomenclature system still in use today, and A. Nelson, one of “ours.” Aven Nelson arrived in Wyoming in 1889 to take a position at the new University of Wyoming and spent most of his life here. He and his wife Ruth Ashton Nelson botanized widely in the state, region, and beyond, discovering and describing many now-well-known western plants.

Scientific names used in this publication are based on *Vascular Plants of Wyoming*, 3rd ed. (Dorn, 2001). In a few cases, these names conflict with USDA PLANTS Database (plants.usda.gov), in which case we have provided the USDA name as a synonym. The PLANTS Database was also used to confirm common names.

Refer to our online version for additional resources for regional nurseries, seed sources, regional gardens with native plants, germination information, organizations for those interested in native plants, pollinators and the plants they prefer, and more. www.wyomingnativegardens.org

If attempting to garden under particularly harsh conditions, you might have greater success with plants that began their lives under similarly tough conditions. Wholesale nurseries in the Midwest can supply plants far afield, and an Ohio-grown plant might have less of a chance in a Pinedale garden than one started along the Front Range. This line of thought is not, however, meant to entice you to remove plants from the wild. In many cases, this practice is illegal, and many wild-dug plants have a very low chance of being transplanted successfully. Similarly, if you are interested in collecting seeds from the wild, learn how to collect seeds in a manner that reduces possible impacts on the wild plant population, that is sensitive to different land use restrictions, and that is in compliance with relevant laws.

Instead of collecting seeds, consider their many commercial sources (refer to our online version for a listing of seed sources). Sellers of native seeds often include a much wider variety of plants than can be found in the nursery. An Internet search can help locate reputable seed dealers (as well as sources for various plants). Don't forget to look for companies that sell seeds for alpine or rock garden plants. Local, regional, and national organizations for plant enthusiasts often have seed exchanges in which difficult-to-find seeds may be found. Such organizations can also provide expertise in starting plants from seed. We find those relatively inexpensive packets of potential garden gems to be particularly addicting. Winter dreams of the garden can lead to more seedlings than you know what to do with!

Some seeds that you purchase or collect require specific conditions for germination (details can generally be found online), but thankfully the most common requirement—cold stratification—requires little more than forethought and some patience (see the Appendix for brief instructions).

Another benefit of starting plants from seed is that you learn what the plants look like at their earliest life stages. This will help you identify volunteer seedlings in the garden (either for the purpose of tender cultivation or eradication). We have also noted that sometimes self-sown seedlings are hardier than their parent plants in the garden. Whether because they have the luxury of never being transplanted or because they have 'chosen' an ideal site is hard to say, but even if you lose a first-generation plant, watch for its offspring. All may not be lost!

Photo: Jennifer S. Thompson



A few other thoughts on incorporating native plants into the garden

We have included with the plant photos and descriptions some information that should help you use these native plants in the landscape. The size of a plant often depends on the location in which it is grown (e.g., the length of the growing season, severity of winter weather, wind exposure) and the available moisture. Thus, our information should be considered approximate. We have included icons for a few relevant topics, such as resistance to various animal pests (note that this information can vary widely from one location to the next) and some common pollinators.

Group together plants with similar water and exposure needs, whether you are creating a garden from scratch or retrofitting an existing landscape. This will increase the likelihood that they will survive and thrive and will make tending the garden simpler (more water here, less there, etc.). Also make sure you know your soil—how much water a plant requires will in part depend on the type of soil in which it is planted. Clay soils can hold more moisture. Sandy soils are typically fast draining. Growing in clay soil can be a problem for some native plants, especially during winter months, during which they rot from too much moisture; however, clay soil can also be beneficial in gardens that are rarely watered. Choosing plants that are well adapted to your site is far easier than trying to adapt your site to a specific plant's needs.

There are many other aspects to designing a well-thought-out garden, which we will not go into detail about here. Perhaps our favorite piece of garden designing advice is to simply wander around well-established landscapes, cultivated or wild, identify what you like, and take lots of pictures and lots of notes.

Whatever your gardening style or level of experience, native plants have a lot to offer in Wyoming gardens. We hope the practical information provided here will help you discover new plants that will add color and life to your world and help foster a deeper appreciation and understanding of our amazing native flora. Happy gardening!



Animal resistance: These icons show animals for which a given plant has been reported to be resistant. But note that if an animal is hungry enough, it will likely eat almost any plant. Adequate fencing is presently the only method that will guarantee your plants aren't eaten.



Pollinators: These icons show pollinators known to visit these species; there may be other pollinators of these plants that are not well known or widely reported.

HERBACEOUS PERENNIALS

*Descriptions of botanical terms followed by an * can be found on page 56.*



Pasqueflower • Photo: Dorothy E. Tuthill

PASQUEFLOWER

Anemone patens L. var. *multifida* Pritz.

Synonym: *Pulsatilla patens* (L.) Mill.

Height: 6-10"

Width: 6"

A very early spring bloomer (Pasque refers to Easter, for the bloom time), sometimes called prairie crocus, this plant is the state flower of South Dakota. The purple cup-like flowers with their contrasting golden stamens* are followed by rather amusing feathery seed heads. Don't mistake the pretty purple parts for petals—they are sepals* masquerading as petals. In fact, pasqueflowers don't have any petals! Once established, pasqueflower doesn't transplant well. This plant can go dormant later in the year. All parts are toxic.

Water needs: moist in the early spring, can dry out later

Exposure: full sun to partial shade

Availability in nurseries: uncommon; non-native species are common

Native range: TX to AK (WY native)

Plant family: Ranunculaceae



Small-leaf pussytoes • Photo: Jennifer S. Thompson

SMALL-LEAF PUSSYTOES

Antennaria parvifolia Nutt.

Height: 1-2" (leaves)

Width: 8-12" or wider

This slowly to moderately spreading groundcover (about 6" tall in flower) is grown mainly for its gray foliage. The cultivar 'McClintock' has relatively inconspicuous inflorescences*, which can be cut off to highlight the small silvery leaves. In dry years, the foliage can winterburn a bit, and the plant can be short-lived in some situations. (Winterburn, which can be caused by winter wind-related desiccation, usually affects plants with foliage that persists throughout the winter. Their leaves or needles usually become brown at the tips or along their whole length.) Wyoming is home to many different *Antennaria* species including rosy pussytoes (*Antennaria rosea* Greene), which has pink blooms and slightly taller foliage. Some species reseed. These two pussytoes are easy to divide and transplant because of their shallow root systems.

Water needs: low, but can live with higher amounts

Exposure: full sun to light shade

Availability in nurseries: common

Native range: found west from KS to the coast and from TX to Canada (WY native)

Plant family: Asteraceae



Aquilegia coerulea • Photo: Jennifer S. Thompson

COLUMBINE

Aquilegia spp.

Height: 18-24"

Width: 12-18"

Columbines are lovely plants that like a bit more water than many of our dryland plants and prefer growing conditions at higher, cooler elevations. They grow in areas with full sun to shade, depending on elevation. Columbines often get powdery mildew when in shady or damp areas, and leaves can be affected by leaf miner insects. These problems are mainly cosmetic. Cut back columbine immediately after flowering to control its often prolific reseeding. Two species worth considering are *A. chrysantha* A. Gray (golden columbine), a southwestern species that tolerates cold, and *A. coerulea* James (Colorado blue columbine), a Wyoming native. Wyoming also harbors a couple of endemic columbines, *A. jonesii* Parry and *A. laramiensis* A. Nelson. Both are diminutive beauties that are great for rock gardens and more-experienced gardeners; you'll have to grow them from seed.

Water needs: moderate

Exposure: full sun to shade

Availability in nurseries: common

Native range: Colorado blue columbine, MT to NM, ID, UT, and SD (WY native); Golden columbine, AZ to TX, UT, and CO

Plant family: Ranunculaceae





Asclepias incarnata • Photo: Jennifer S. Thompson

MILKWEED

Asclepias spp., including *A. tuberosa* L. (butterfly milkweed) and *A. incarnata* L. (swamp milkweed)

Height: 20-30"

Width: individual plants are only 6-8" wide but can form diffuse clumps

Milkweeds attract adult butterflies to the garden and provide the only rearing site for monarchs. Although the plants can be quite leggy, the unusual flowers are striking, and, of course, the seed pods are attractive and fun to play with because of the silky hairs attached to the seeds. The most common Wyoming milkweed is *A. speciosa* Torrey, common along roadsides, but it's not the most attractive one. Butterfly milkweed (usually orange) is the most readily available species, but it seems to be at the edge of its range of survival in higher-elevation parts of Wyoming. Pink-flowered swamp milkweed, one of 14 milkweeds native to Wyoming, is becoming more popular. Milkweeds are easily grown from seed but require stratification (see the Appendix).

Water needs: moderate to low, once established

Exposure: full sun

Availability in nurseries: common to rare, depending on species (see above)

Native range: *A. tuberosa*, most of North America except for WY and to the north and west of WY; *A. incarnata*, most of North America except the West Coast and western Canada (WY native)

Plant family: Asclepiadaceae (often included in Apocynaceae)





Poppy mallow • Photo: Amy A. Fluet

POPPY MALLOW, PRAIRIE WINE CUPS

Callirhoe involucrata (Torr. & A. Gray) A. Gray

Height: 6-12"

Width: 24-36"

Long-blooming poppy mallow's scrambling stems can interweave through other foliage without overwhelming its neighbors. Its bright-magenta flowers, which appear throughout the summer, work especially well with yellows and blues. This plant's foliage dies back to its taproot in the fall. It can be started from seed, but the taproot makes transplanting difficult. Members of the mallow family (scarlet globemallow, hollyhock, and hibiscus among others) are easily recognized by their flowers. Take a closer look at these monadelphous* flowers and you will see that a tube of fused stamen filaments surrounds the pistil.

Water needs: low

Exposure: full sun

Availability in nurseries: common

Native range: much of the central U.S. (native but rare in WY)

Plant family: Malvaceae



Harebells • Photo: Dorothy E. Tuthill

HAREBELLS

Campanula rotundifolia L.

Height: 11-14"

Width: 8-12"

Harebells are a common wildflower in Wyoming; they tolerate a wide variety of conditions and bloom until frost. Rotundifolia means round-leaved, so you may be surprised by all the narrow (i.e., linear) leaves. It's the first leaves of the seedling that are roundish—really more heart-shaped. Plants are long-lived and spread by seed quite readily, which makes them either care-free or invasive depending on one's perspective. Ask a friend for some!

Water needs: low

Exposure: full sun

Availability in nurseries: fairly common

Native range: most of North America except the southeastern U.S. (WY native)

Plant family: Campanulaceae



Sugarbowl clematis (with *Penstemon hallii* in the foreground) • Photo: Amy A. Fluet

SUGARBOWL CLEMATIS

Clematis hirsutissima Pursh var. *scottii* (Porter) Erickson

Synonym: *Clematis scottii* Porter

Height: 10-12"

Width: 12-16"

Like other *Clematis* species, sugarbowl clematis can be slow to become established but is well worth the wait. This clematis, however, is not a climber but forms a mounded shape. The blue bell-shaped flowers are followed by Dr. Seussian seed heads. This plant can flop over on the ground mid-season; overhead watering seems to encourage this. A little bit of shade may help sugarbowl clematis thrive in an especially dry situation.

Water needs: moderate

Exposure: full sun to light shade

Availability in nurseries: fairly uncommon

Native range: UT, CO, NM, WY, NE, SD, and OK (WY native)

Plant family: Ranunculaceae



Purple prairie clover • Photo: Jennifer S. Thompson

PURPLE PRAIRIE CLOVER

Dalea purpurea Vent.

Synonym: *Petalostemon purpureum* (Vent.) Rydb.

Height: 2-3'

Width: 1-2'

This gorgeous purple-flowered plant provides needed color later in the growing season. A slow grower at first, long-lived purple prairie clover takes a year or two to bulk up and really start blooming. It also emerges slowly in the spring. Like other members of the pea family, the plant houses nitrogen-fixing bacteria on its roots, providing natural fertilizer for other plants in the area. Purple prairie clover can reseed.

Water needs: dry to moderately moist

Exposure: full sun to part shade

Availability in nurseries: common

Native range: broadly distributed across North America, except for the coasts
(WY native)

Plant family: Fabaceae





Narrow-leaf coneflower (with *Rudbeckia* sp.) • Photo: Jennifer S. Thompson

NARROW-LEAF CONEFLower

Echinacea angustifolia DC.

Height: 12-24"

Width: 12-18"

These purple-flowered, hairy-leaved plants are tough. Though shorter than the more common purple coneflower (*Echinacea purpurea*, a species from the eastern U.S.), these plants are definitely more drought tolerant. Plants can be started from seed and should be transplanted when small; they are difficult to transplant when larger because of their taproot. Plants start out a bit slowly and take a few years to bulk up in size. This plant can reseed a fair amount depending on conditions.

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon in nurseries but not hard to start from seed

Native range: MT to MN, NM to LA, and central Canada (WY native)

Plant family: Asteraceae





Garrett's firechalice • Photo: Jennifer S. Thompson

GARRETT'S FIRECHALICE

Epilobium canum (Greene) P.H. Raven ssp. *garrettii* (A. Nelson) P.H. Raven

Synonym: *Zauschneria garrettii* A. Nelson

Height: 12"

Width: 18-24"

Native to the western part of the state, this low-growing, creeping plant provides a super dose of red-orange color in the late summer. These colorful tubular flowers are often visited by hummingbirds. This plant spreads underground at a moderate rate and can cover a large area if allowed. It is a bit grumpy about being divided. Be careful when you buy plants, as some varieties and species in nurseries are less cold hardy than others.

Water needs: dry to moist

Exposure: full sun to part shade

Availability in nurseries: common, can also be started from seed

Native range: WY, ID, UT, and AZ

Plant family: Onagraceae





Erigeron compositus • Photo: Dorothy E. Tuthill

CUTLEAF DAISY

Erigeron compositus Pursh

Height: 3-5"

Width: 4-6"

Small, white or lavender daisy-like flowers above silvery lobed foliage make this a lovely little plant, perfect for rock gardens, troughs, and borders with their early-season blooms. Cutleaf daisy likes disturbed areas and gravelly, even rocky, soil. In those conditions, it self-propagates easily from seed. Some individuals (and populations) lack ray florets*, so the flowers are little yellow buttons. *Erigeron pinnatisectus* (A. Gray) A. Nelson is a similar lavender-flowered species that has pinnately lobed* leaves instead of palmately lobed* leaves. It is restricted to the mountains of Colorado and adjacent bits of New Mexico and Wyoming. Showy fleabane, *E. speciosus* (Lindl.) DC., which is common across much of Wyoming and the west, is a taller species with larger flowers. There are more than 45 species of *Erigeron* native to Wyoming, many of which would make fine garden plants if grown from wild-collected or purchased seeds.

Water needs: low to moderate

Exposure: full sun to part shade

Availability in nurseries: fairly common

Native range: western North America (WY native)

Plant family: Asteraceae



Sulfur buckwheat 'Kannah Creek' • Photo: Jennifer S. Thompson

SULFUR BUCKWHEAT

Eriogonum umbellatum Torr.

Height: 4-5" (leaves); flowers up to 12" tall

Width: 18-24"

Eriogonums are very common and tough native plants in Wyoming with flower colors ranging from white to pinkish to yellow. The commonly available cultivar of *E. umbellatum*, 'Kannah Creek', creates a nice, somewhat glossy groundcover and blooms most of the summer. Flowers age from a chartreuse yellow to a burnt-orange color, which works well with similarly colored sandstone pavers, and the leaves turn a nice red in the late summer. More than 20 species of *Eriogonum* grace the Wyoming landscape; many are worth growing in the garden and can be started from seed.

Water needs: low

Exposure: full sun

Availability in nurseries: common

Native range: MT, ID, WY, UT, CO, NV, and OR

Plant family: Polygonaceae





Blanket flower • Photo: Dorothy E. Tuthill

BLANKET FLOWER

Gaillardia × grandiflora

Height: 12-18"

Width: 12-18"

Colorful-blooming hybrids of native gaillardias come in a variety of sizes, color variations, and forms. Some cultivars can be fairly short-lived; however, they also tend to reseed a fair amount. Removal of spent blooms will often lengthen the blooming season. These widely adapted plants can take hot, dry conditions. Contact with the leaves can cause a skin rash (dermatitis) in susceptible folks.

Water needs: low but adaptable

Exposure: full sun

Availability in nurseries: common

Native range: hybrid of species (*G. aristata* Pursh, WY native), *G. pulchella* Foug. native to the U.S.

Plant family: Asteraceae



Prairie smoke • Photo: Dorothy E. Tuthill

PRAIRIE SMOKE

Geum triflorum Pursh

Height: 8-16"

Width: 4-8", expanding over time to 2' or more

The nodding pink flowers look like closed bells—it's the seed heads that give prairie smoke its common name. After the flower fades, the styles* elongate into feathery upright plumes that look somewhat like a feather duster. The leaves green up in early spring; flowers appear in mid-to-late spring/early summer and are followed quickly by seeds, which linger on the plants for a month or more. When not in flower or fruit, the plant consists of a dense rosette of pinnately lobed* and toothed, and slightly fuzzy, basal leaves. The leaves remain green well into the autumn and through drought, although in severely dry conditions the plant can go dormant. *G. triflorum* is a federally listed threatened species in Michigan and New York—two states at the very edge of its range.

Water needs: low to moderate

Exposure: full sun to part shade

Availability in nurseries: fairly common

Native range: western North America (WY native)

Plant family: Rosaceae





Perennial sunflower • Photo: Jennifer S. Thompson

PERENNIAL SUNFLOWER

Helianthus maximiliani Schrad.

Height: 4-10'

Width: 18-24"

This tall, vigorous plant provides sunny late-season color for the back of the border. Cultivars are available that bloom earlier for shorter-seasoned areas. Perennial sunflower prefers more water than many other Wyoming natives. Lack of sufficient supplemental water will produce significantly shorter plants with smaller blossoms. This perennial reseeds and can spread aggressively by rhizomes in some situations; however, limiting supplemental irrigation can help keep it under control.

Water needs: moderate

Exposure: full sun

Availability in nurseries: common

Native range: native to most of the U.S. (WY native)

Plant family: Asteraceae





Scarlet gilia (with *Dalea purpurea*) • Photo: Jennifer S. Thompson

SCARLET GILIA

Ipomopsis aggregata (Pursh) Grant

Height: up to 3'

Width: 6-12"

This is a beautiful red-flowered (to pink) biennial or short-lived perennial. Young plants overwinter as rosettes of finely dissected, almost fern-like leaves and then bloom the following summer, often with multiple stalks of flowers that persist until frost. Flowers are a late-season favorite of hummingbirds and hawk moths in higher-elevation areas. The plants die after blooming, but not before distributing seeds across the garden. This plant can reseed a lot in favorable conditions. Seedlings should be transplanted when young for the greatest chance of survival.

Water needs: quite low to moist

Exposure: full sun

Availability in nurseries: uncommon but fairly easy to start from seed

Native range: western U.S. (WY native)

Plant family: Polemoniaceae





Blue flag • Photo: Dorothy E. Tuthill

BLUE FLAG

Iris missouriensis Nutt.

Height: 1-2'

Width: expands slowly to form large clumps

This is the only iris native to Wyoming. It is common in moist areas across the state. Its name refers to the Missouri river, not the state; it was first collected by Lewis and Clark on their expedition in 1806. Leaves are silvery-blue, slender, and strap-like. Each flower stalk usually produces several pale blue to purple flowers with yellow highlights on the petals. Though generally considered a wetland plant, it can tolerate very dry conditions and will bloom so long as the soil remains moist in the spring and early summer. They are sometimes considered a weed in hay fields.

Water needs: moderate to high in spring

Exposure: full sun

Availability in nurseries: common

Native range: western North America (WY native)

Plant family: Iridaceae



Liatris punctata • Photo: Jennifer S. Thompson

DOTTED BLAZING STAR

Liatris punctata Hook.

Height: 12-18"

Width: 6-12"

The purple bottlebrush-like flowers on this very nice native plant provide a splash of vivid color later in the summer and early fall when most other flowering plants are winding down. The bright flowers seem to attract butterflies by the score. Dotted blazing star, which grows around the state, is more drought tolerant than *Liatris spicata* (a plant from the eastern U.S.), the *Liatris* species most commonly found in nurseries. Be patient if growing this plant from seed or seedlings—it grows a bit slowly and can take a year or two to bulk up and bloom. Plants become difficult to transplant when larger. Dotted blazing star can reseed.

Water needs: very dry but adaptable

Exposure: full sun

Availability in nurseries: fairly uncommon but can be started easily from seed

Native range: central U.S. (MT to TX) and central Canada (WY native)

Plant family: Asteraceae





Lewis' flax • Photo: Jennifer S. Thompson

LEWIS' FLAX

Linum lewisii Pursh

Height 12-18"

Width ~ 18"

Perhaps the best known and toughest of the western wildflowers, this is the lovely blue flower seeded along roadsides. It is extremely prolific and drought tolerant. Flax blooms primarily in the early summer and then sheds seeds for the rest of the growing season. Sufficient moisture will prolong flowering or even restart flowering late in the summer. It can become a garden pest but can be a great addition to less-cultivated areas, such as open spaces and roadsides. Cutting back plants by about half after flowering can help control reseeding.

Water needs: low

Exposure: full sun

Availability in nurseries: common (you can also ask around to see if a friend has some) and easy to start from seed

Native range: western and northern North America (WY native)

Plant family: Linaceae



Colorado four o'clock (with *Allium sphaerocephalon* and *Eschscholzia californica*) • Photo: Amy A. Fluet

COLORADO FOUR O'CLOCK

Mirabilis multiflora (Torr.) A. Gray

Height: 12-24"

Width: 2-4'

This substantial plant dies back to the ground each winter and is late to return the following spring. It will surprise you with its vigorous growth each summer and long-lasting show of bright-purple flowers. Colorado four o'clock reseeds moderately, but its taproot makes transplanting seedlings tricky. Wyoming has three native species of *Mirabilis*—all with pretty flowers, though less spectacular than *M. multiflora*.

Water needs: low, extremely low once established

Exposure: full sun

Availability in nurseries: uncommon but germinates easily from seed (although difficult to transplant)

Native range: southwest U.S., TX to CA, and north to CO

Plant family: Nyctaginaceae





Tufted evening primrose • Photo: Jennifer S. Thompson

TUFTED EVENING PRIMROSE

Oenothera caespitosa Nutt.

Height: ~12"

Width: 12-24"

What a super plant! This low-growing, short-lived plant produces huge, fragile-looking white flowers with a sweet lemony fragrance. The flowers, which are often visited by hawk moths, open in the evening and shrivel in the heat of the day. It can be a vigorous reseeder depending on where it is placed—as a result it will move around your landscape, dying out here, sprouting up there. This plant has a taproot, so transplant it when it is young. (Some other native *Oenothera*'s spread aggressively underground, becoming garden pests—know your *Oenothera* before you plant it!) Rabbits may chew on the plant, especially when food sources are scarce. Given the chance, tufted evening primrose will usually recover very well from this activity.

Water needs: very dry to moderately moist

Exposure: full sun

Availability in nurseries: uncommon but reasonably easy to start from seed

Native range: western U.S. and central Canada (WY native)

Plant family: Onagraceae





Missouri evening primrose • Photo: Amy A. Fluet

MISSOURI EVENING PRIMROSE

Oenothera macrocarpa Nutt.

Height: 12-18"

Width: 18-24"

Missouri evening primrose is a somewhat low-growing, sprawling plant with glossy deep-green leaves and huge yellow flowers that bloom in a manner similar to white tufted evening primrose. However, this plant seems to be much more long-lived than the tufted evening primrose. It grows quickly and easily from seed and often blooms its first year. Taprooted Missouri evening primrose wakes up slowly in the spring, so don't assume it's dead when it fails to show up in May. Plant it where you want it—it resents transplanting. The large, four-winged fruits blow about the garden and may result in new plants in unexpected places.

Water needs: dry to moist

Exposure: full sun

Availability in nurseries: fairly common

Native range: NE to TX; in WY, only known from a roadside in Sheridan County

Plant family: Onagraceae





P. barbatus



P. eatonii



P. pinifolius

Photos: Jennifer S. Thompson

BEARDLIP PENSTEMON

Penstemon barbatus (Cav.) Roth

Height: 18-30"

Width: 10-18"

Penstemon is the largest genus of wildflowers restricted to the new world—mostly north of Mexico. In Wyoming, there are more than 40 species, some broadly distributed and some restricted to very narrow ranges. The common name of beardtongue refers to the often-hairy staminode* that protrudes slightly from the corolla* and looks just like a hairy tongue. The flowers of the beardlip beardtongue are red, a color not found in any Wyoming native penstemon; fortunately, it grows well here. It, and another excellent red species, the firecracker penstemon (*P. eatonii* A. Gray), flowers later in the season than the blue penstemons—usually July and August. Firecracker penstemon's bright red flowers can reach to 40" in height; both red species attract hummingbirds and hawk moths. *Penstemon barbatus* has been used as a parent for a number of hybrids and cultivars, mostly red or pink. Pineleaf beardtongue (*P. pinifolius* Greene) is another bright-red choice; it is only a foot tall and can sometimes suffer winterburn (i.e., the foliage browns and dies) from excessive winter exposure to sun and drying winds.

Water needs: very low

Exposure: full sun

Availability in nurseries: common, as are a number of hybrids and cultivars of *P. barbatus*

Native range: *P. barbatus*, southern CO south to Mexico; *P. eatonii*, similar and into NV and CA; *P. pinifolius*, NM and AZ

Plant family: Plantaginaceae





P. palmeri



P. eriantherus



P. grandiflorus

Photos: Jennifer S. Thompson

PALMER'S BEARDTONGUE

Penstemon palmeri A. Gray

Height: 3-4'

Width: 12-18"

This beauty has been described as "one of the glories of the plant kingdom, and probably the most fragrant of all penstemons" (Nold 1999), which is perhaps an understatement! This tall species has exceptionally large (for a penstemon) pink flowers and toothed silvery-blue leaves that clasp the stem. Insects and hummingbirds find these flowers irresistible. Like so many penstemons, it is not happy if watered much and does best if neglected. In fact, it has been used extensively for roadside seeding and has taken successfully in many parts of Wyoming.

Other nice pink penstemons include *P. clutei* A. Nelson (Sunset Crater penstemon), *P. pseudospectabilis* M.E. Jones (desert beardtongue), *P. grandiflorus* Nutt. (large beardtongue), and *P. eriantherus* Pursh (fuzzytongue beardtongue). Fuzzytongue is broadly distributed across Wyoming, is about a foot tall, and has lavender-pink flowers and fuzzy leaves and stems, as well as the eponymous tongue. The desert beardtongue is spectacular (don't believe the species name in this case!), grows up to 5 feet tall, and has rose-red to magenta flowers. 'Elfin Pink' is another pink-flowered penstemon that is more commonly available; however, this cultivar's parent is actually the red *P. barbatus*.

Water needs: very low

Exposure: full sun

Availability in nurseries: Palmer's beardtongue is relatively common, as is 'Elfin pink'; look to specialist nurseries for the others

Native range: *P. palmeri*, UT, NV, CA, and AZ, but watch for it along WY highways; *P. clutei*, AZ; *P. pseudospectabilis*, UT, NM, AZ, and CA; *P. eriantherus*, northern Rocky Mountains and Great Plains, west into OR and WA (WY native)

Plant family: Plantaginaceae





Penstemon strictus • Photo: Jennifer S. Thompson

ROCKY MOUNTAIN BEARDTONGUE

Penstemon strictus Bentham

Height: 18-30"

Width: 12-36"

Of the purple/blue penstemons, Rocky Mountain beardtongue is the species most commonly found at nurseries. With tall spikes of blue-purple flowers and shiny dark-green leaves, it is attractive in any garden and very attractive to pollinators, too. Like most penstemons, it has a short blooming season—typically the month of June. Also like most, it prefers dry soils. With excess water, it will develop mildew on the leaves, and the root crowns may rot, especially if it goes into winter with wet feet. Rocky Mountain beardtongue can reseed aggressively, but cutting off the flower spikes after the blooms fade is an easy way to control this tendency.

Other nice blue-to-purple penstemons to consider are Grand Mesa penstemon (*P. mensarum* Pennell), with tall spikes of deep-blue flowers; Wasatch penstemon (*P. cyananthus* Hook.), with bright-blue flowers; and *P. virens* Pennell ex Rydb., sometimes called blue mist beardtongue. This last one is smaller, only a foot or so tall, and can vary in color from purple to blue. It is also happy with light shade, unlike most other penstemons from our region. An even shorter penstemon is mat penstemon (*P. caespitosus* Nutt. ex Gray). It forms a great groundcover in some rather windblown locations and is covered with purple-blue flowers in the late spring.

Several species have flowers of glorious, to-die-for turquoise and sky-blue, including *P. angustifolius* Nutt. ex Pursh (narrow-leaf) and *P. nitidus* Douglas ex Benth. These two native penstemons are much more challenging to grow—they're just not happy except in quite dry, neglected garden beds. In a garden setting, these are often very short-lived. Fortu-



Penstemon virens • Photo: Jennifer S. Thompson

nately, both are Wyoming natives. Look for their amazing bursts of color in May and try them in the garden if you really like a challenge. *P. angustifolius* and *P. nitidus* are longer lived in troughs or rock gardens. The seeds of many penstemons require stratification for germination (see the Appendix).

Water needs: very low

Exposure: full sun

Availability in nurseries: *P. strictus* is very common, *P. mensarum* and *P. virens* are also available; many other species are available from specialty nurseries or can be grown from seed

Native range: *P. strictus*, WY south; *P. cyananthus*, far western WY and adjacent regions; *P. virens*, the Front Range of CO and into southern WY; *P. nitidus*, northern half of WY into Canada; *P. angustifolius*, eastern CO and WY and adjacent regions

Plant family: Plantaginaceae





Sand phlox • Photo: Jennifer S. Thompson

SAND PHLOX, CLEFT PHLOX

Phlox bifida Beck

Height: 4-6"

Width: 16" or wider

The deeply cleft, pale-blue flowers of sand phlox offer a good alternative to more common creeping (moss) phlox (*P. subulata* L.) varieties offered in nurseries, as it seems less likely to winterburn. Variety 'Betty Blake', with lavender-pink flowers, may be more common than the generic species at nurseries. This slow-spreading, but long-blooming, spring plant totally obscures its wiry foliage with blossoms when in bloom. Theoretically it can reseed, although seedlings are rare (and welcome) in the garden.

Water needs: low to moderate

Exposure: full sun to light shade

Availability in nurseries: uncommon

Native range: midwestern U.S.

Plant family: Polemoniaceae



Kelsey's phlox, Lemhi Purple • Photo: Jennifer S. Thompson

KELSEY'S PHLOX, MARSH PHLOX

Phlox kelseyi Britt.

Height: 1-1.5"

Width: 5-8"

This early bloomer is covered in glowing bright-purple flowers that hide its needle-like green foliage. It has a longer bloom time than many other *Phlox* species and is less likely to suffer from winterburn (perhaps because it is so short). It's a great plant for the front of a garden bed. *Phlox kelseyi* is found in a few locations in Wyoming; the cultivar 'Lemhi Purple' was originally collected in the Lemhi Mountains, which are near the southwest portion of the Montana-Idaho border.

Water needs: low to moderate

Exposure: full sun to light shade

Availability in nurseries: common

Native range: central CO to MT and west to ID and NV (WY native)

Plant family: Polemoniaceae



Sharp-leaf twinpod • Photo: Dorothy E. Tuthill

SHARP-LEAF TWINPOD

Physaria acutifolia Rydb.

Height: 1-2" (slightly taller when in bloom)

Width: 3-6"

The silvery-gray rosettes of sharp-leaf twinpod bring cheerful yellow flowers to the late-spring garden; the plants are later ringed by their characteristic inflated seedpods (bladderpods). These short-lived plants reseed moderately but never crowd out their neighbors, ensuring a steady supply in the garden. Wyoming is home to more than 20 species of bladderpods (*Physaria* and *Lesquerella* spp.), many of which are garden-worthy. Plants are easy to propagate from seed.

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon, but germinates easily from seed

Native range: Rocky Mountain region and NM, UT, and NV (WY native)

Plant family: Brassicaceae



Upright prairie coneflower • Photo: Jennifer S. Thompson

UPRIGHT PRAIRIE CONEFLower

Ratibida columnifera (Nutt.) Wooten & Standley

Height: 18-24"

Width: 18-24"

This short-lived but colorful plant has a long bloom period in late summer in higher-elevation areas. Flower color ranges from yellow to burnt orange, with a characteristic elongated central disc.* The long disc and colorful, drooping petals have given this plant its other common name, Mexican hat. This species reseeds moderately; seedlings can be tricky to transplant. Coming in contact with the leaves can cause a skin rash (dermatitis) in some susceptible folks.

Water needs: dry to moderately moist

Exposure: full sun

Availability in nurseries: common, can easily be started from seed

Native range: most of the U.S. and Canada (WY native)

Plant family: Asteraceae





Black-eyed Susan • Photo: Jennifer S. Thompson

BLACK-EYED SUSAN

Rudbeckia hirta L.

Height: 12" (leaves), up to 36" when in flower

Width: up to 2'

Various varieties of this colorful, hairy-leaved native are available. Flower colors range from a cheerful sunny yellow to burnt orange. This is a great plant for lots of late-summer color in higher-elevation areas of the state. Can be short-lived but also can reseed a lot!

Water needs: dry to moderately moist

Exposure: full sun

Availability in nurseries: common, easy to grow from seed

Native range: most of the U.S. and Canada, including eastern WY

Plant family: Asteraceae





Blue sage • Photo: Jennifer S. Thompson

BLUE SAGE, PITCHER SAGE

Salvia azurea Michx. ex Lam. var. *grandiflora* Benth.

Height: up to 4'

Width: 3-4'

This glorious plant blooms when fall is about to set in at higher-elevation areas of the state. The beautiful sky-blue flowers are happily visited by hummingbirds before they depart for the season. Blue sage can flop a bit in some instances; this can be prevented by early-season pruning in areas of the state with a longer growing season or by giving it something to prop itself on. Can reseed some if it has the time for its seed to mature. In our experience, this plant often does not have time to bloom in exposed sites in higher-elevation areas.

Water needs: dry to moderately moist conditions (but requires good drainage)

Exposure: full sun

Availability in nurseries: uncommon, but easy to start from seed

Native range: NE, CO, UT, and most of the southwestern and Great Plains states

Plant family: Lamiaceae





Sphaeralcea coccinea • Photo: Dorothy E. Tuthill

SCARLET GLOBEMALLOW

Sphaeralcea coccinea (Nutt.) Rydb.

Height: 4-12"

Width: 6-12", spreading underground to form much larger colonies

This plant seems to prefer neglect. The salmon to orange-red flowers appear during the driest summers and in unexpected places—no doubt the reason for another common name, cowboy's delight. The leaves are palmately lobed* and silvery. With a microscope or hand lens, you can admire the beautiful star-shaped hairs that cover the leaves. This plant is difficult to establish, but once done, it will spread along the roots and pop up unexpectedly. And who wouldn't want an unanticipated splash of scarlet? (Some people don't, and they may find globemallows difficult to eradicate.) *Sphaeralcea munroana* (Dougl. ex Lindl.) Spach ex Gray is a larger, almost-shrubby cousin, up to 3' tall, with less-deeply lobed leaves and equally attractive flowers.

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon

Native range: western North America (WY native)

Plant family: Malvaceae



Desert prince's plume (with *Gaillardia* sp.) • Photo: Jennifer S. Thompson

DESERT PRINCE'S PLUME

Stanleya pinnata (Pursh) Britt.

Height: 18-36"

Width: 18-24"

This native plant can form a striking clump of bright-yellow flower plumes in extremely arid sites and in the nastiest soils. It is found in most of Wyoming and prefers barren hills and flats with selenium-rich soils. Because desert prince's plume concentrates selenium in its tissues, it can be toxic to livestock. In some locations, plants may be short-lived, but moderate reseeding does occur. Though available only from select nurseries, prince's plume is easy to propagate from purchased seed.

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon, but easy to start from seed

Native range: western U.S., excluding OR (WY native)

Plant family: Brassicaceae





Stemless four-nerve daisy • Photo: Dorothy E. Tuthill

STEMLESS FOUR-NERVE DAISY

Tetraneuris acaulis (Pursh) Greene

Height: 2-8"

Width: 4-8"

The unappealing common name—a direct translation of the scientific name (tetraneurus meaning four nerves and acaulis meaning stemless)—does nothing to project the attractiveness, dare we say cuteness, of this species in the wild and in the garden. Bright-yellow daisy-like flowers, about 2" in diameter, appear early and continue through the summer. The leaves are basal (hence the “stemless”), generally linear, and may be hairy to nearly smooth. One of the varieties of *T. acaulis*, var. *caespitosus* A. Nelson, is adapted to the windiest and driest ridge tops. Restricted to Wyoming, Colorado, Utah, and a bit of New Mexico, it has broader, extremely hairy leaves, and the flowers are produced barely above the leaves. Easily grown from seed, stemless four-nerve daisy, once established, will maintain itself through reseeding.

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon, but easily grown from seed

Native range: western North America except Pacific Northwest (WY native)

Plant family: Asteraceae



Easter daisy • Photo: Amy A. Fluet

EASTER DAISY, TOWNSEND'S DAISY

Townsendia spp.

Height: 0.5-1.5"

Width: 1-2.5"

It's worth knowing what an Easter daisy seedling looks like in the garden, as gardeners who don't mistakenly pull them up will be rewarded the following spring when these tiny gray rosettes erupt with cheerful daisies. The large stemless flowers, which can be white, pink, lavender, blue, or yellow, perch on top of the rosettes and seem out of proportion to the plant's size. Plants are short-lived but reseed readily; their small size keeps them from crowding out neighboring plants. The 14 Wyoming species can be difficult to identify but are all worth trying in the garden.

Water needs: low to moderate

Exposure: full sun

Availability in nurseries: uncommon, but easy to grow from seed

Native range: western U.S. (varies by species) (WY native)

Plant family: Asteraceae





Soapweed yucca • Photos: Dorothy E. Tuthill and Jennifer S. Thompson

SOAPWEED YUCCA

Yucca glauca Nutt.

Height: 2-5'

Width: 3-5'

Soapweed yucca is a Great Plains species that grows as far west as Wyoming and Montana. The lance-like leaves are stiff, coarse, and sharp but worth the blood-letting for the tall spikes of whitish pendulant flowers. Yuccas don't bloom every year, but some years are phenomenal. Because of the shape of the flower, pollination can be accomplished by only a single species of insect, the yucca moth. Female yucca moths lay eggs in the ovary and then deliberately pack pollen on the stigma. The growing moth larvae eat the developing seeds but usually not all of them. Before the fruits open to disperse seeds, the caterpillar chews its way out and drops to the ground, where it buries itself, spins a cocoon, and waits out the winter. In the spring, the moths emerge just as the yucca blooms and wait at the flowers to find a mate. Of course, gardens are places of perpetual orgies, but the relationship between *Yucca glauca* and the yucca moth is especially elegant and worthy of attention. Soapweed yucca is sometimes considered a nuisance plant in pastures, and colonies can be difficult to eradicate.

Water needs: low

Exposure: full sun

Availability in nurseries: common

Native range: Great Plains (Mississippi River to Rocky Mountains), in WY except southwest quarter of the state

Plant family: Agavaceae

SHRUBS



Leadplant • Photos: Amy A. Fluet

LEADPLANT

Amorpha canescens Pursh

Height: ~3'

Width: ~3'

This well-behaved shrub gets a rather late start in the spring. Its gray-green pinnate leaves* are followed by striking purple flowers with prominent orange anthers* that are loved by bees. Pruning the shrub in the late winter or early spring, either back to the ground or to 12" or so, helps maintain its shape. Like other members of the pea family, this one has a symbiotic relationship with nitrogen-fixing bacteria. The plant provides a home for the bacteria within its root nodules, and the bacteria convert atmospheric nitrogen into organic forms of nitrogen accessible to plants (a.k.a. fertilizer).

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon

Native range: Midwest and Great Plains, as far west as eastern WY

Plant family: Fabaceae





Mountain mahogany • Photo: Dorothy E. Tuthill

MOUNTAIN MAHOGANY

Cercocarpus montanus Raf.
and *C. ledifolius* Nutt.

Height: ~6'

Width: 4-8'

These ultra-hardy, slow-growing deciduous shrubs can be used in either a more wild or formal garden setting. The small red-and-yellow flowers are inconspicuous; mountain mahogany should be grown for its fantastic curly-feathered seeds. The plumes, as you might expect, are helpful in seed dispersal, but they also are responsible for planting the seed. The seeds themselves are quite heavy and pointed. They land point down, plume up. Repeated wetting and drying of the plume drills the seed into the soil. Site this shrub so that it is backlit by the sun to make the most of these silvery plumes. *Cercocarpus ledifolius* is known as curl-leaf mountain mahogany because the margins of the leaves curl toward the leaf mid-rib. It holds its leaves in the winter better than *C. montanus*, but the latter has larger flat (and, to some eyes, more attractive) leaves. Wyoming is also home to a third species, *C. intricatus* S. Watson (a.k.a. *C. ledifolius* var. *intricatus*), little-leaf mountain mahogany, found in the southwest part of the state and equally suitable for the home garden. Elk and deer consider mountain mahogany a delicacy. If the wildlife don't do it for you, these species can be sheared to produce a more compact or formal appearance.

Water needs: low

Exposure: full sun

Availability in nurseries: uncommon

Native range: *C. montanus*, SD to Mexico and west from OR to CA (WY native);
C. ledifolius, western U.S.; *C. intricatus*, southwestern U.S.

Plant family: Rosaceae





Young fernbush (with *Gaillardia* sp.) • Photo: Jennifer S. Thompson

FERNBUSH

Chamaebatiaria millefolium (Torr.) Maxim.

Height: up to 5'

Width: ~5'

Fernbush is relatively new to the nursery trade in our area but is so far proving to be a great addition to the garden. This shrub has a rounded form and aromatic, finely cut gray-green foliage. When in bloom, the shrub is covered with white flowers, which attract bees and butterflies. Fernbush can be sheared to fit in formal landscapes; Centennial Gardens in Denver has sheared hedges of it.

Water needs: low, very drought tolerant once established

Exposure: full sun to part shade

Availability in nurseries: fairly common

Native range: West coast of U.S. and Great Basin

Plant family: Rosaceae





Redosier dogwood • Photos: Clay Thompson

REDOSIER DOGWOOD

Cornus sericea L.

Height: up to 6-8'

Width: 10-15'

The younger stems on this green and somewhat glossy-leaved shrub are red, which provides nice winter color. The stems lose their vivid hue as they age, so periodic pruning will keep these shrubs colorful. The foliage also turns a lovely shade of red in the fall. The plant bears white flowers followed by whitish fruits that are relished by birds. This shrub can spread and form a thicket, so careful placement in the landscape is advised.

Water needs: moist

Exposure: full sun to part shade

Availability in nurseries: fairly uncommon

Native range: most of the U.S. except the Southeast (WY native)

Plant family: Cornaceae





Apache plume • Photos: Amy A. Fluet

APACHE PLUME

Fallugia paradoxa (D. Don) Endl. ex Torr.

Height: 3-6'

Width: 3-6'

The slightly rangy look of this hardy, drought-tolerant shrub is in contrast to its lovely white flowers and amusing feathery pink seedheads, which resemble the bad-hair-day seeds of *Clematis* and prairie smoke (*Geum triflorum*). Siting this shrub so that it is backlit by the sun will make the most of the seedheads. Flowering occurs throughout much of the summer and into the fall in some locations. Pruning the shrub or growing it without supplemental irrigation will keep its shape more compact.

Water needs: low

Exposure: full sun

Availability in nurseries: common

Native range: southwestern U.S.

Plant family: Rosaceae





Oregon grape • Photo: Jennifer S. Thompson

OREGON GRAPE

Mahonia repens (Lindl.) G. Don

Height: 6-12"

Width: up to 2'

Oregon grape barely qualifies as a shrub, being only a foot or so tall, but it is quite striking in appearance. It bears fragrant yellow flowers followed by blue berries (if male and female plants are present). The glossy dark-green leaves, which look a bit like holly, turn red in the fall. The fruits, which are high in vitamin C, are said to make fair jelly, but you probably won't want to eat them straight off the plant.

Water needs: moist to dry

Exposure: full sun (in wetter areas) to part shade

Availability in nurseries: common

Native range: most of the western U.S. (WY native)

Plant family: Berberidaceae





Shrubby potentilla • Photos: Jennifer S. Thompson

SHRUBBY POTENTILLA

Pentaphylloides floribunda (Pursh) Löve

Synonym: *Dasiphora fruticosa* (L.) Rydb. ssp. *floribunda* (Pursh) Kartesz

Height: 2-4'

Width: 2-4'

This long-blooming, common shrub can be a tough-yet-beautiful addition to the landscape. Plants have a mounded form with finely cut foliage, and varieties are available that have yellow, white, or pink flowers. This shrub is very cold tolerant but may need rejuvenating pruning after some years. Plants can be late to leaf out in the spring.

Water needs: supplemental moisture preferred

Exposure: full sun to part shade

Availability in nurseries: common (but many varieties in nurseries are Eurasian in origin)

Native range: western and northern U.S. (WY native)

Plant family: Rosaceae





Western mock orange 'Cheyenne' • Photos: Amy A. Fluet

WESTERN MOCK ORANGE

Philadelphus lewisii Pursh

Height: 4-9'

Width: 4-9'

Although mock orange might not have visible characteristics of a drought-tolerant plant, its looks belie its hardy constitution. It blooms in early summer, during which the shrub is covered with lovely white flowers that are strongly and sweetly scented. Be sure to site this shrub where it has plenty of room to grow and where its flowers can be appreciated. This plant can become a bit scraggly over time, which can be corrected with judicious pruning shortly after flowering. The selection 'Cheyenne', which originated from the Cheyenne High Plains Grassland Research Station, is especially lovely and easily found in nurseries. Littleleaf mock orange (*Philadelphus microphyllus* A. Gray), native to the southwest (and barely into Wyoming), is a bit less cold hardy but slightly more tolerant to drought.

Water needs: low to moderate

Exposure: full sun to part shade

Availability in nurseries: common

Native range: northwestern U.S. and CA and western Canada

Plant family: Hydrangeaceae





Sand cherry (with *Penstemon* sp. and *Callirhoe involucrata*) • Photo: Jennifer S. Thompson

SAND CHERRY

Prunus pumila L. var. *besseyi* (L.H. Bailey) Gleason

Synonym: *Prunus besseyi* L.H. Bailey

Height: 3-5'

Width: 3-5'

This glossy-leaved shrub has a number of positive characteristics. It can be used in low-water landscapes and is covered with fragrant white flowers in spring followed by edible fruit (mainly for plum-like jams and jellies and use by wildlife). Some fruit may be too astringent for consumption. It is unknown if sand cherry seeds contain the cyanogenic glucosides responsible for the toxicity and astringency of other *Prunus* species, so it's probably best to leave the seeds to the birds. The variety 'Pawnee Buttes' varies somewhat in form—some plants are better classified as 'low growing' whereas others are 'prostrate'. The latter have almost bonsai-like growth, and their twisted, ancient-looking branches add interest to the winter garden. 'Pawnee Buttes' can suffer some dieback in exposed sites. This shrub is also susceptible to powdery mildew (less water, full sun, and good air circulation can help with this problem), but this appears to be mainly a cosmetic issue. It is very cold tolerant and can reproduce both through suckering and reseeding. Plant more than one sand cherry for fruit production. Fall color can be spectacular.

Water needs: dry to moist

Exposure: full sun

Availability in nurseries: common

Native range: northern Rocky Mountain region, central U.S., and central Canada (WY native)

Plant family: Rosaceae





Three-leaf sumac 'Gro-Low' • Photos: Amy A. Fluet

THREE-LEAF SUMAC, SKUNKBUSH SUMAC

Rhus trilobata Nutt.

Height: 3-12'

Width: 4-10'

The shiny green leaves of skunkbush sumac, which are relatively late to appear in the spring, maintain their fresh appearance under tough conditions in the garden. This shrub can expand to form large thickets. Its inconspicuous yellow flowers are followed by more-noticeable orange-red berries that are tart but loved by birds. Leaves, which produce an odor when touched (note the name—but it's really not bad), have nice fall color ranging from yellow to red to purple. The variety 'Gro-Low', as its name implies, stays relatively low to the ground (~2') but spreads about as wide as the species and may be easier to find in nurseries. Autumn Amber is a new Plant Select cultivar. Three-leaf sumac is content with part shade as well as with full sun.

Water needs: dry to moderate

Exposure: full sun to part shade

Availability in nurseries: common

Native range: western half of the U.S. and central Canada (WY native)

Plant family: Anacardiaceae





Golden currant • Photo: Jennifer S. Thompson

GOLDEN CurrANT

Ribes aureum Pursh

Height: 3-5'

Width: 3-5'

This vigorous, shrubby plant has abundant fragrant yellow flowers in the spring followed by edible berries, which are often consumed by wildlife. In the fall, the foliage can turn a nice red color. Currant is an alternate host for white pine blister rust (*Cronartium ribicola*; *ribicola* means living on *Ribes*), an exotic fungal pathogen currently (pun intended, though this is not a funny subject) devastating some tree populations. In Wyoming, whitebark pine and limber pine are susceptible to white pine blister rust. Thus, if you have any prized specimens of those species, you probably shouldn't be planting any *Ribes*. This shrub spreads by suckers and reseeding. Golden currant is frequently sold at conservation district tree and shrub sales.

Water needs: moist to dry; will fruit better if kept moist

Exposure: full sun to part shade

Availability in nurseries: common

Native range: western U.S. and Canada (WY native)

Plant family: Grossulariaceae





Woods' rose (with *Dalea purpurea*) • Photo: Jennifer S. Thompson

WOODS' ROSE

Rosa woodsii Lindl.

Height: 3-6'

Width: 3-6' or more

This wild rose bears very fragrant simple pink flowers followed by red rose hips. A vigorous grower, this thorny shrub can spread to form dense thickets, so careful placement in the landscape is needed. Look for it at conservation district tree and shrub sales.

Water needs: dry to moist

Exposure: full sun to part shade

Availability in nurseries: uncommon

Native range: central U.S. from TX to MT, AK, and Canada (WY native)

Plant family: Rosaceae



ABOUT SOME OF THE BOTANICAL TERMS IN THE PLANT DESCRIPTIONS

Flowers:

In a typical flower the outermost whorl of **sepals** surrounds and protects the bud; they are usually green, and can be found beneath the open flower. The showy **petals** are next. The male structures are called **stamens**; each consists of a **filament** (stalk) topped by an **anther**, where pollen is produced. The female structure is the **pistil**, made up of (from top down) the **stigma** (sticky part that receives pollen), the **style** (stalk), and the **ovary**, in which the eggs are hidden.

Of course, there are all kinds of variations on this basic arrangement of parts. For example, some flowers lack petals. Pasqueflowers have showy sepals to attract insects, while wind-pollinated plants, like grasses, having dispensed with showiness altogether, lack both sepals and petals. Columbines, lilies, and sulfur flowers, among others, have equally showy sepals and petals. Together, sepals and petals are called the **corolla**, and if they cannot be distinguished, then they are called **tepals**.

Members of the Mallow family (Malvaceae) (such as hollyhocks) have many stamens, and the filaments are fused into a tube that surrounds the style. Such an arrangement is called **monadelphous**, and is characteristic for mallows, but encountered elsewhere, too. In the Penstemons, there is a sterile, hairy structure, presumed to have evolved from a stamen, called the **staminode**. The staminode probably serves to force insect visitors in the correct direction to pollinate the flower, and may prevent inefficient pollinators from entering the flowers.

Members of the sunflower family (Asteraceae) are more interesting yet! What we perceive as a single flower is really a bunch of very small flowers, called florets. **Disc florets**, in the center of “ordinary” sunflowers, have five little petals fused into a tube, five stamens with anthers fused into a tube, and a pistil that extends through the anther tube and unfurls its two curled branches. **Ray florets** form the outer ring of sunflowers; their five petals are fused into a single, large ray, and they are often sterile. Although thistles (and thistle-like flowers) and dandelions (and similar flowers) have slightly different kinds of florets, all of these plants have compound flowers, with each floret making a single one-seeded fruit. This is obviously a very successful strategy—Asteraceae is the most diverse family in the world, with an impressive 111 genera represented in Wyoming!

An **inflorescence** is just a botanist’s term for a cluster of flowers. Sometimes an inflorescence might look like a single flower, as is the case with daisies.

Leaf shapes:

The simplest leaf shapes are called **simple**, meaning that they are all in one piece, and lack large protrusions and indentations (such as a lilac leaf). Other options for leaves are **lobed** and **compound**. Lobed leaves have large protrusions, and compound leaves are divided into more than one leaflet. Oak and maple leaves are good examples of lobed leaves, and also illustrate the difference between palmate and pinnate: Oaks are **pinnately lobed** (lobes opposite each other across the midvein), and maples are **palmately lobed** (all lobes with a common origin, like fingers from the palm of your hand). Compound leaves are also pinnate (such as on caragana shrubs) or palmate (such as on lupines) in the same way.

MORE RESOURCES FOR GROWING NATIVE PLANTS

Books:

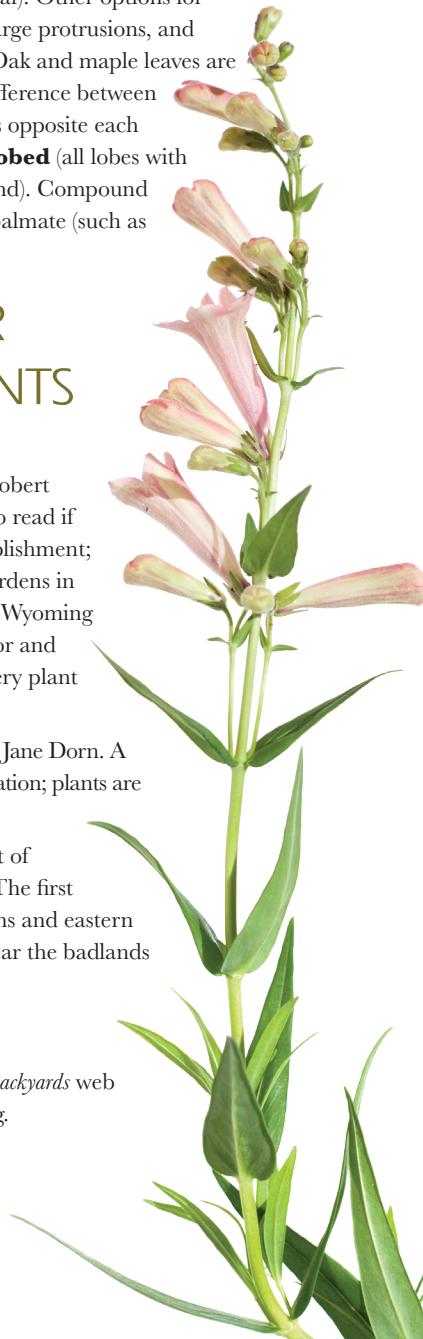
High and Dry: Gardening with Cold-Hardy Dryland Plants – Robert Nold. First published in 2008. A great read. The book to read if you want to go really dry—no irrigation except for establishment; however, the author is located near Denver (and thus gardens in a warmer and slightly wetter climate than that of many Wyoming locations). A fun read for those who enjoy flippant humor and love plants. Some may find it frustrating because not every plant description has an accompanying photo.

Growing Native Plants of the Rocky Mountain Area – Robert and Jane Dorn. A great reference book giving details on growing and propagation; plants are categorized into growing zones as defined by the authors.

Jewels of the Plains – Claude Barr. An older book now out of print (but may be available through your local library). The first book written on growing native plants of the Great Plains and eastern Rocky Mountains. Barr was a rancher who gardened near the badlands of South Dakota.

On-line:

<http://barnyardsandbackyards.com> The *Barnyards & Backyards* web site has many gardening resources; click on Landscaping.



<http://plants.usda.gov/> The USDA PLANTS Database contains a wide range of information on plants, including some “plant guides.”

<http://www.uwyo.edu/wera1013> Native Plants for the Intermountain West has useful write-ups on a variety of native plants and nurseries that carry these species. Produced by a consortium of university plant experts.

<http://navigate.botanicgardens.org/ecmweb/FindPlant.html> The Gardens Navigator is a searchable database of the entire living collection at Denver Botanic Gardens. The search engine will produce plant lists by selected plant characteristics. It will also produce maps of where the plants are in the garden so you can see them in person.

<http://plantselect.org/> Plant Select is a cooperative program administered by Denver Botanic Gardens and Colorado State University in concert with horticulturists and nurseries throughout the Rocky Mountain region and beyond. They have helped introduce many native plants to the horticultural industry and promote their use.

<http://www.wynps.org/> The Wyoming Native Plant Society website contains useful articles and other resources about native plants in Wyoming.

A few gardens to visit:

- Agricultural Resource and Learning Center demo garden (extension building near the fairgrounds in Casper, WY)
- Water-Wise Demonstration Garden (LaBonte Park in Laramie, WY)
- Cheyenne Botanic Gardens (Cheyenne, WY)
- Denver Botanic Gardens (Denver, CO)
- The Gardens at Kendrick Lake Park (Lakewood, CO)
- Conservation Gardens at Northern Colorado Water Conservancy District (Northern Water; Berthoud, CO)
- Yampa River Botanic Park (Steamboat Springs, CO)
- Betty Ford Alpine Gardens (Vail, CO)
- Red Butte Gardens (Salt Lake City, UT)



Photo: Brenna R. Marsicek

APPENDIX

Increasing native plant seed germination with cold stratification— it's easy and fun!

As many native plants may not be commonly found in nurseries, you'll need to locate seed and then determine the best method for growing it. Seed suppliers frequently include germination information, either on

the seed packet itself or in their catalog, or these details can be found online.

Growing plants from seed often requires working around “germination inhibition,” a strategy that plants have evolved to keep their seed from germinating before conditions are likely to be favorable for growth. Many of our native plants suppress germination until winter has passed. This type of germination inhibition can be easily overcome by giving the seed a period of “cold stratification” that mimics winter. It will also increase the rate of germination for some species.

Though necessary for successful germination of many species, cold stratification is not a difficult process. Basically you need to keep the seed cool or cold and moist for a number of weeks (this number varies by species). This can be accomplished in a variety of ways.

Direct seeding in the area of your yard you'd like the plants in is about the least work-intensive method. Plant seeds in the fall and remember that all the seeds you plant may not germinate. Mark the area where they were planted and give it a gentle watering. Nature will complete the stratification process. Make sure you know what the seedling plants look like, or you may find yourself accidentally pulling them up while weeding. If you have a limited amount of seed, this method may be a bit too hit-or-miss for your liking—consider starting those seeds in pots.

One of the most common methods used to cold-stratify is to plant the seeds in pots (be sure to label them in a weather-proof way) in December or January, water the pots, and then place them outdoors to be subjected to natural freezing and thawing. The north side of a building can help ensure they don't see too wide of a variation in daily temperature swings, and it is a good idea to protect the pots from wind. Water as necessary through the



Potted seeds that have spent a few months out in the cold begin to germinate. The hardware cloth keeps out debris and curious critters.



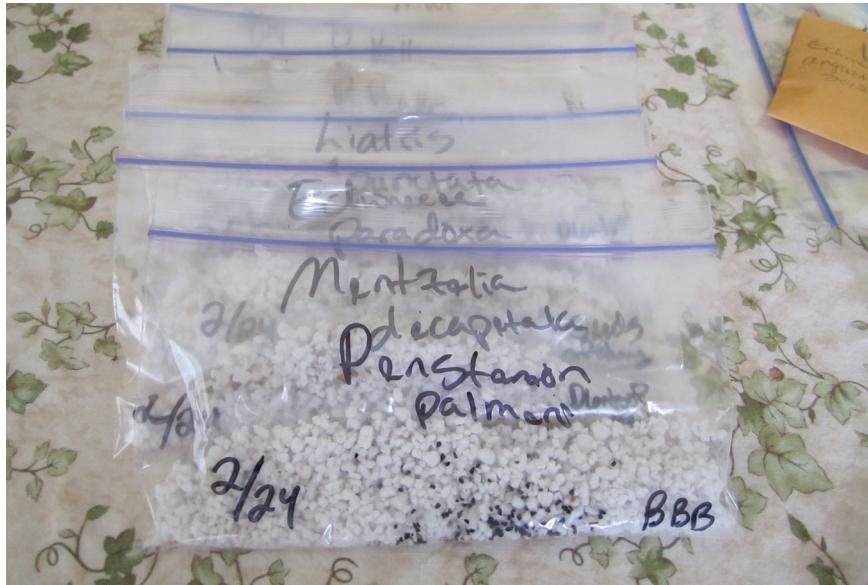


Baggies in a produce bin in the refrigerator. Let the chill begin.

winter so the planting mix doesn't dry out. Topping off the pots with a half-inch layer of washed pea gravel or other fine rock mulch can help with this. If the seeds require light for germination, sprinkle them on top of the mulch. Eventually, come spring or summer, little seedlings will start to appear and are often ready to transplant by late summer. If no seedlings appear, leave the pots out for another round of winter weather; some seeds require two or more winters to overcome inhibition.

The other common method of cold stratification is to place the seeds in labeled plastic bags or other containers with moist perlite or vermiculite and stick them in the refrigerator for the requisite number of weeks (often 8 weeks, but it varies). Keep the containers closed to hold in moisture but periodically check on them. When you start to see the white root tips emerge from the seeds, it's time to gently pot them up in soil-less mix and place them under lights or in another location until they are big enough to transplant. For more information on growing these seeds indoors after they germinate, see the 2014 Winter issue of the *Barnyards & Backyards: Rural Living in Wyoming* magazine. This method generally allows you to get plants in the ground earlier than the outdoor pot method, but it is a bit more work and requires indoor space.

When carrying out either of these latter two methods, the germinating medium (soil-less mix, perlite, etc.) should be damp but not soggy. Seeds will rot if they sit in water for too long (they need some oxygen) or will become moldy.



Seed placed in labeled baggies with damp perlite.



Seedlings being grown under lights in the basement.

INDEX

A

- Amorpha canescens* 44
 See also Leadplant
- Anemone patens* 7
 See also Pasqueflower
- Antennaria parvifolia* 8
 See also Small-leaf pussytoes
- Apache plume 48
- Aquilegia* 9
 See also Columbine
- Asclepias incarnata* L. 10
- Asclepias* spp. 10
 See also Milkweed
- Asclepias tuberosa* 10
 See also Milkweed

B

- Beardlip penstemon 29
- Black-eyed Susan 37
- Blanket flower 19
- Blue flag 23
- Blue mist beardtongue 31
- Blue sage 38

C

- Callirhoe involucrata* 11
 See also Poppy mallow
- Campanula rotundifolia* 12
 See also Harebells
- Cercocarpus intricatus* 45
 See also Little-leaf
 mountain mahogany

Cercocarpus ledifolius 45

 See also Curl-leaf
 mountain mahogany

Cercocarpus ledifolius
var. *intricatus* 45

Cercocarpus montanus 45
 See also Mountain mahogany

Chamaebatiaria millefolium 46
 See also Fernbush

‘Cheyenne’ mock orange 51

Cleft phlox 33

Clematis hirsutissima 13
 See also Sugarbowl clematis

Clematis hirsutissima Pursh
var. *scottii* 13

Clematis scottii 13
 See also Sugarbowl clematis

Colorado four o’clock 26

Columbine 9

Cornus sericea 47
 See also Redosier dogwood

Creeping phlox 33

Curl-leaf mountain mahogany 45

Cutleaf daisy 17

D

Dalea purpurea 14
 See also Purple prairie clover

Dasiphora fruticosa 50
 See also Shrubby potentilla

Desert beardtongue 30

Desert prince’s plume 40

Dotted blazing star 24

E

- Easter daisy 42
Echinacea angustifolia 15
 See also Narrow-leaf coneflower
'Elfin Pink' penstemon 30
Epilobium canum 16
 See also Garrett's firechalice
Erigeron compositus 17
 See also Cutleaf daisy
Eriogonum umbellatum 18
 See also Sulfur buckwheat

F

- Fallugia paradoxa* 48
 See also Apache plume
Fernbush 46
Firecracker penstemon 29
Fuzzytongue beardtongue 30

G

- Gaillardia × grandiflora* 19
 See also Blanket flower
Garrett's firechalice 16
Geum triflorum 20
 See also Prairie smoke
Golden currant 54
Grand Mesa penstemon 31
'Gro-Low' three-leaf sumac 53

H

- Harebells 12
Helianthus maximiliani 21
 See also Perennial sunflower

I

- Ipomopsis aggregata* 22
 See also Scarlet gilia
Iris missouriensis 23
 See also Blue flag

K

- Kelsey's phlox 34

L

- Leadplant 44
Lewis' flax 25
Liatris punctata 24
 See also Dotted blazing star
Linum lewisii 25
 See also Lewis' flax
Little-leaf mountain mahogany 45

M

- Mahonia repens* 49
 See also Oregon grape
Marsh phlox 34
Mat penstemon 31
Milkweed 10
Mirabilis multiflora 26
 See also Colorado four o'clock
Missouri evening primrose 28
Mountain mahogany 45
Moss phlox 33

N

- Narrow-leaf coneflower 15

O

- Oenothera caespitosa* 27
 See also Tufted evening primrose
Oenothera macrocarpa 28
 See also Missouri evening primrose
Oregon grape 49

P

- Palmer's beardtongue 30
Pasqueflower 7
'Pawnee Buttes' sand cherry 52
Penstemon angustifolius 31

<i>Penstemon barbatus</i>	29	<i>Phlox kelseyi</i>	34
<i>See also</i> Beardlip penstemon;		<i>See also</i> Kelsey's phlox	
<i>See also</i> 'Elfin Pink' penstemon			
<i>Penstemon caespitosus</i>	31	<i>Phlox subulata</i>	33
<i>See also</i> Mat penstemon		<i>See also</i> Creeping phlox,	
<i>Penstemon clutei</i>	30	<i>See also</i> Moss phlox	
<i>See also</i> Sunset Crater penstemon			
<i>Penstemon cyananthus</i>	31	<i>Physaria acutifolia</i>	35
<i>See also</i> Wasatch penstemon		<i>See also</i> Sharp-leaf twinpod	
<i>Penstemon eatonii</i>	29	Pineleaf beardtongue	29
<i>See also</i> Firecracker penstemon		Pitcher sage	38
<i>Penstemon eriantherus</i>	30	Poppy mallow	11
<i>See also</i> Fuzzytongue beardtongue		Prairie smoke.....	20
<i>Penstemon grandiflorus</i>	30	Prairie wine cups.....	11
<i>Penstemon hallii</i>	30	<i>Prunus besseyi</i>	52
<i>Penstemon mensarum</i>	31	<i>See also</i> Sand cherry	
<i>See also</i> Grand Mesa penstemon		<i>Prunus pumila</i> L. var. <i>besseyi</i>	52
<i>Penstemon nitidus</i>	31	<i>See also</i> Sand cherry	
<i>Penstemon palmeri</i>	30	<i>Pulsatilla patens</i>	7
<i>See also</i> Palmer's beardtongue		<i>See also</i> Pasqueflower	
<i>Penstemon pinifolius</i>	29	Purple prairie clover.....	14
<i>See also</i> Pineleaf beardtongue			
<i>Penstemon pseudospectabilis</i>	30	R	
<i>See also</i> Desert beardtongue		<i>Ratibida columnifera</i>	36
<i>Penstemon strictus</i>	31	<i>See also</i> Upright prairie coneflower	
<i>See also</i> Rocky Mountain beardtongue		<i>Redosier dogwood</i>	47
<i>Penstemon virens</i>	31	<i>Rhus trilobata</i>	53
<i>See also</i> Blue mist beardtongue		<i>See also</i> Three-leaf sumac	
<i>Pentaphylloides floribunda</i>	50	<i>Ribes aureum</i>	54
<i>See also</i> Shrubby potentilla		<i>See also</i> Golden currant	
Perennial sunflower	21	Rocky Mountain beardtongue	31
<i>Petalostemon purpureum</i>	14	<i>Rosa woodsii</i>	55
<i>See also</i> Purple prairie clover		<i>See also</i> Woods' rose	
<i>Philadelphus lewisii</i>	51	<i>Rudbeckia hirta</i>	37
<i>See also</i> Western mock orange		<i>See also</i> Black-eyed Susan	
<i>Phlox bifida</i>	33		
<i>See also</i> Sand phlox		S	
		<i>Salvia azurea</i>	38
		<i>See also</i> Blue sage	
		<i>Sand cherry</i>	52
		<i>Sand phlox</i>	33

Scarlet gilia.....	22
Scarlet globemallow	39
Sharp-leaf twinpod	35
Shrubby potentilla.....	50
Skunkbush sumac.....	53
Small-leaf pussytoes.....	8
Soapweed yucca	43
<i>Sphaeralcea coccinea</i>	39
<i>See also</i> Scarlet globemallow	
<i>Sphaeralcea munroana</i>	39
<i>Stanleya pinnata</i>	40
<i>See also</i> Desert prince's plume	
Stemless four-nerve daisy	41
Sugarbowl clematis	13
Sulfur buckwheat.....	18
Sunset Crater penstemon	30
 T	
<i>Tetraneuris acaulis</i>	41
<i>See also</i> Stemless four-nerve daisy	
Three-leaf sumac	53
<i>Townsendia</i>	42
<i>See also</i> Easter daisy	
Townsend's daisy.....	42
Tufted evening primrose	27
 U	
Upright prairie coneflower.....	36
 W	
Wasatch penstemon.....	31
Western mock orange.....	51
Woods' rose	55
 Y	
<i>Yucca glauca</i>	43
<i>See also</i> Soapweed yucca	
 Z	
<i>Zauschneria garrettii</i>	16
<i>See also</i> Garrett's firechalice	

Back cover photo by Dorothy E. Tuthill

