

PLANTS FOR POLLINATORS

Building Healthy Habitats with
Utah Native Plants



Utah Pollinator Habitat Program

Credits

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This publication provides guidance for native plant identification in Utah and is intended as an introduction to native plant gardening and cultivation. This booklet is not meant to be a complete reference. Additional information may be obtained by consulting references cited and other experts.

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Photos used in the document were in the public domain, unless otherwise noted.

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The booklet's design concept is to spread awareness about and access to native plants in an effort to increase native pollinator habitat throughout the state of Utah. Funding for the Utah Pollinator Habitat Program was initiated by House Bill (HB) 224, passed by the Utah legislature in March 2021.

Table of Contents

A Note to the Reader	3
Why Native Plants?	4
Benefits of Native Plants	5
Basics of Pollinators	6
Pollinators Need Habitat	7
How You Can Help	7
Native Bees	9
Native Bee Facts	9
Native Bee Species	10
Landscaping with Native Plants	
How Do I Get Started?	12
Soil Texture	14
What Will a Native Landscape Look Like?	15
Will Native Plants Thrive in My Yard?	16
Establishment & Maintenance	17
Seed Stratification Treatments	18
Understanding Plant Water Needs	19
Irrigation Types and System Output	22
Long-Term Maintenance	24
Plant Profile Key	25
Plant Descriptions	
Annual Wildflowers	26
Perennial Wildflowers	30
Grasses & Grass-Likes	66
Woody Plants	74
Quick Reference Plant Guide	83

Photo credit: Robb Hannawacker



Painted Lady
(*Vanessa cardui*)



Hunt's Bumble Bee
(*Bombus huntii*)



Marine Blue
(*Leptotes marina*)



(*Helianthus autumnale*)



Spotted Joe-Pye Weed (*Eutrochium maculatum*) and Monarch Butterfly (*Danaus plexippus*)



Blue Grama (*Bouteloua gracilis*)

Dear Reader,

Welcome to Plants for Pollinators! This booklet contains information on several of Utah's native plant species to guide users toward creating or enhancing pollinator habitats. It instructs on individual plant establishment, maintenance, and water needs. In addition, basic information is included on their benefits to local pollinators, the importance of pollinators in our landscapes, and pollinator habitat needs. A beginner's guide to native bees is also provided.

Gardening with native plants can be considered a celebration of our natural heritage. These plants are adapted to regional soil and climate conditions, having thrived in their natural habitats for millennia. Each species plays a vital role within their respective ecosystem by fulfilling specific habitat need(s). As we cultivate native plants in our landscapes, we extend a helping hand to native pollinators, other wildlife, and ourselves—all of whom ultimately rely on functional ecosystems and the biodiversity they support.

We have also included historical accounts of some native plant uses, highlighting their cultural and functional importance as documented throughout North American history. This information, while fascinating, further emphasizes the value of maintaining these native plants not just for the sake of our environment but also as a reflection of our journey and resourcefulness through time. We need to consider what importance these plants could hold for our future.

By concentrating on native plants, we hope to engender a deeper understanding and appreciation of your role within the intricate web of life. We also hope to generate a sense of wonder, curiosity, and respect for the diverse world of pollination and its relation to you and your landscape.

Thank you for your interest in pollinator habitats! We hope you become captivated by the many native plants, bees, butterflies, moths, and everything in between. Please join our Facebook page (Utah Pollinator Habitat Program Group Page) to share your discoveries, ask questions, and get inspired.

Best wishes,

Your friends from the
Utah Pollinator Habitat Program Committee

Why Native Plants?

Utah is home to diverse landscapes that host unique and intricate ecosystems. However, the abundance of native habitats has declined with urban development, human expansion, and landowners' use of imported plants and turf grasses. While perhaps visually appealing, such landscapes provide fewer resources to support local pollinators that have evolved to rely on Utah's native plant communities. With fewer resources available, a corresponding decline of pollinator populations has occurred.

Creating or enhancing habitat using native plants can increase availability and connectivity of resources (food and shelter). Such resources are essential to support diverse pollinator populations which are crucial for healthy ecosystems, food production, and local economies. Landscaping with native species has an added benefit of creating habitats that require less water while producing seasonal blooms and visual interest throughout the year.

Why not create your own native plant habitat that you can enjoy while supporting more native pollinator species and a healthier ecosystem?



A cedar waxwing
(*Bombycilla cedrorum*)
enjoying the fruit from
a serviceberry tree
(*Amelanchier* sp.)

Benefits of Native Plants¹

- Provide essential habitat for native pollinators
- Adapted to regional climates
- Adapted to native soils
- Often require less water (once established)
- Help mitigate flooding and erosion
- Promote biodiversity
- Supply quality food for wildlife
- Provide carbon sequestration
- Do not require fertilizer
- Diverse, unique, and aesthetically pleasing



Desert sage (*Salvia dorrii*) growing at Grand Staircase-Escalante National Monument

Basics of Pollinators

Who Are the Pollinators?

- Bees
- Butterflies
- Moths
- Birds
- Beetles
- Bats
- Wasps

Threats to Pollinators

- Habitat loss
- Climate change
- Pesticides
- Pathogens

Without Pollinators, We Would Lose:²

- Around 80% of flowering plants
- 30% of the food we eat including more than 150 food crops in the United States
- About 50% of the world's oils, fibers, and materials



White-lined Sphinx Moth
(*Hyles lineata*)

Many plants depend on pollinators for reproduction. Pollinators help move pollen from one flower to another, allowing for the development of seeds, fruit, and the next generation of plants.

Pollinators ensure that we can reliably grow and harvest the natural resources upon which we depend. Pollinators also help minimize pest populations, protect soil and water quality, and increase soil carbon storage.³

An ongoing global decline in pollinator populations poses a serious threat to agriculture and functional ecosystems as currently known. As pollinators decline, over 1,200 crop species and wild plants that rely on their services for reproduction could be negatively impacted.

As a result of declines in pollinator abundance and diversity, ecosystems begin to show decreases in the overall number of plants and animals they can support.

Recognizing the significance of pollinators in the health of our landscapes is important for safeguarding our food supply and preserving the well-being of our planet.

Pollinators Need Habitat

While different pollinators have specific needs to support each stage of their life cycle, all pollinators need access to high-quality, natural habitats (native plants). These habitats should provide adequate year-round food resources (flowers that provide nectar and pollen), host plants for caterpillars, shelter, and nesting sites. Safe spaces with minimal exposure to pesticides is also important. Your help is needed! You can make changes to your landscape and help teach others to encourage pollinator-friendly practices in your community.

How You Can Help:



- Provide diverse native flowering plants with bloom times in spring, summer, and fall
- Add other vegetation to provide shelter, roosting, and perching sites for wildlife
- Minimize or eliminate pesticide use wherever possible. Consider management alternatives and increase habitat for beneficial insects or birds known to prey on pests
- Designate undisturbed nesting areas like bare ground, old wood, and brush piles
- Consider strategic mowing in these areas and mow at the highest setting to avoid disturbing nesting bees
- Keep your landscape on the menu for other native insects by growing native plants that provide food for caterpillars (this will also attract and feed other wildlife and boost diversity)



Hunt's Bumble Bee (*Bombus huntii*)



Mason Bee (*Osmia* spp.)



Green Sweat Bee (*Agapostemon* sp.)



Globemallow Bee (*Diadasia diminuta*)



Arizona Carpenter Bee
(*Xylocopa californica* ssp. *arizonensis*)



Mining Bee (*Andrena* spp.)

Photo credit: Robb Hannawacker

Native Bees

When you think of bees, what comes to mind? Many people envision beehives, beekeepers, honey, and even getting stung! The bee most people are familiar with is the European honeybee, a non-native species that was imported to the Americas for agricultural pursuits.

Most native bees vary in size, do not sting, live solitarily, and do not make honey. Yet they are critical to our food supply and biodiversity, as a whole. Native bees are pollinating powerhouses that significantly supplement the work of honeybees in agriculture. The native blue orchard bee, for example, can pollinate just as much if not more than the honeybee.⁴

Native bees thrive best using the native plants with which they evolved as a food source. As more habitat containing native plants declines, so do native bee populations!

Although concerns of honeybee hive losses and colony collapse are prevalent, there are more honeybees on earth than ever!⁵ This calls into question: are we too focused on saving the wrong bees?

Native Bee Facts⁶

- Nearly 1,100 species are native to Utah
- 90% are solitary (they don't live in a colony)
- 70% nest in the ground
- 20-45% are specialist species requiring native plant pollen
- Many species are smaller than a grain of rice!
- They rarely sting
- Most don't make honey
- They often pollinate better than honeybees
- They significantly supplement the work of honeybees in agriculture
- Thriving honeybee hives can be detrimental to native bees due to resource competition and the spread of disease



Photo credit: Dr. Joseph Wilson, USU

Common Native Bee Species



Leaf Cutter Bee

(*Megachile* spp.)

- Small to medium size (1/4-1/2")
- Nests in existing holes in ground, trees, soil, or plant stems
- Active from April-October



Mason Bee

(*Osmia* spp.)

- Small to large size (1/4-3/4")
- Nests in holes in wood
- Active from March-June



Wool Carder Bees

(*Anthidium* spp.)

- Medium size (1/2")
- Builds nests from woolly plant hairs
- Active from May-September



Large Carpenter Bees

(*Xylocopa* spp.)

- Large size (3/4")
- Chews holes in wood for nests
- Active from April-October



Small Carpenter Bees

(*Ceratina* spp.)

- Small size (1/4")
- Nests in hollow plant stems
- Active from June-September



Mining Bees

(Family: Andrenidae)

- Small to medium size (1/4-1/2")
- Nests underground
- Active from March-September



Digger Bees

(*Anthophora* spp.)

- Large size (3/4")
- Digs burrows into dry soil
- Active from March-October



Bumble Bees

(*Bombus* spp.)

- Most are large in size (3/4-1"), some medium (1/2")
- Nests in plant stems, woody debris, underground
- Active from June-September



Yellow-Faced Bees

(*Hylaeus* spp.)

- Small to medium size (1/4-1/2")
- Nest in existing tunnels or holes in wood or plant stems
- Active from May-September



Common Sweat Bee

(Family: Halictidae)

- Small to medium size (1/4-1/2")
- Clustered ground nests are often shared by semi-social females
- Active from March-October



Green Sweat Bee

(*Agapostemon* spp.)

- Small to medium size (1/3-2/3")
- Dig deep burrows, but females may share a nest entrance
- Active from May-October



Tiny Sweat Bee

(*Lasioglossum* spp.)

- Small to medium size (1/16-3/8")
- Females have individual nests, but may share a nest entrance
- Active from April-October



Long-Horned Bees

(Tribe: Eucerini)

- Medium to large size (1/2-3/4")
- Dig deep tunnels in ground for nesting sites
- Active from May-September



Cuckoo Bees

(*Nomada* spp.)

- Small to medium size (1/4-1/2")
- Lay eggs in other species' nests
- Active from April-August



Polyester Bees

(*Colletes* spp.)

- Medium to large size (1/2-3/4")
- Females line underground nest by making a waterproof secretion
- Active from March-May and August-October



Squash Bee

(Tribe: Eucerini)

- Medium size (1/2")
- Build nests in ground near host plants
- Active from July-September

Landscaping with Native Plants

How do I get started?



Proper planning is important when starting a native landscape. Creating a landscape map that groups areas based on conditions such as sun exposure, water availability, and soil type can be helpful when selecting plants that will thrive in those areas. Aim for a number of different textures, sizes, colors, and bloom periods for visual interest and to support a variety of pollinators.

Before planting, the site will require preparation such as clearing weeds and other undesirable vegetation. These 'undesirables' create resource competition that can negatively affect plant establishment and growth. Weeds can be removed by hand or through methods like smothering or solarizing (using plastic sheeting). In instances where weeds are difficult to control by hand, careful herbicide applications can help. Regardless of the weed management method used, initial and ongoing weed management is imperative for native plant establishment.

Avoid tilling and pesticide use wherever possible as they can harm pollinators. If pesticides must be used, choose products that do not contain neonicotinoids⁷ and follow the labeled instructions carefully to avoid unnecessary environmental damage. Applying pesticides (including herbicides) to plants when they are not in bloom and during times of day when pollinators are less active can help protect pollinators.

Soil amendments are usually not necessary unless the site has been altered, developed, or has extremely alkaline soil. Utah State University Analytical Laboratories (USUAL) offer low-cost soil tests, which can help landowners understand the characteristics and needs of their soil.⁸



Top: Native plants grown for the Utah Pollinator Habitat Program (Photo credit: Jennifer Burghardt Dowd).

Bottom: Planting at the Perry Pollinator Habitat (Photo credit: Becky Yeager).

Soil Texture

Different plants have varying drainage requirements. Soil texture influences watering needs and nutrient availability for plants. Understanding your soil texture is essential to help your garden thrive. The main soil texture types include clay, sand, silt, and loam. Soil texture can also be mixed between these types.

Clay

- Made up of tiny particles that compact tightly together
- Difficult for water to penetrate, but retains water well once wet (may become water-logged)
- Rich in nutrients
- Water deeply, less frequently



Clay

Sand

- Made of large particles
- Drains fast; does not retain water
- Low in soil organic matter and nutrients
- Give less water at a time, but water more frequently



Sand

Silt

- Sediment deposited by water, ice, and wind
- Particles are larger than clay, smaller than sand
- Moderate drainage compared to silt and sand



Silt

Loam

- A mixture of sand, silt, and clay in equal parts
- Fertile
- Good drainage, but retains water better than sand



Loam

What Will a Native Landscape Look Like?

Many people are pleasantly surprised to learn about the beauty and variety of our native plants. Native plants can be used in any landscaping style as long as their needs for sun, drainage, space, and water are met.

If you prefer a more natural appearance, incorporate casual groupings of shrubs and trees, rocks and boulders, and areas of wildflowers in the design.

Prefer a more traditional look? You can achieve a similar appearance by swapping out traditionally-used ornamental plants for native ones. Instead of a water-loving, non-native, Kentucky bluegrass lawn, grow a lawn of native grasses or sedges. Designs can also be enhanced by using a variety of native trees and shrubs to provide structure, visual interest, and wildlife habitat.

Need ideas? Check out the landscape suggestions for each species in this booklet.



This vibrant rock garden features native plants such as globemallow, Lewis flax, California poppies, and others.

Photo credit:
Miriam Valere

Will Native Plants Thrive in My Yard?

Yes—as long as they are grown in the right conditions! Grown in the correct habitat, native plants will be adapted to regional soil types and precipitation, limiting the need for fertilizers, soil amendments, and supplemental irrigation.

To meet the needs of your plants, group plants with similar light, soil, and water requirements. This allows for more efficient irrigation and less chance of overwatering plants that prefer dry conditions.

Also consider hardiness zones; some natives from the southern part of the state might lack cold-hardiness along the Wasatch Front. Though some species have demonstrated hardiness well beyond their natural growth regions, it is a good idea to prioritize locally indigenous plants for optimum success.



Native plants from different habitats have different needs: blue vervain (*Verbena hastata*, left) prefers wetter conditions than globemallow (*Sphaeralcea* spp., right).

Establishment & Maintenance

Planting can be done using plant starts and/or seeds. Plant starts can be placed in the ground during the fall months before they go dormant for the winter, or in spring after the danger of frost has passed. Regular watering during the first few weeks promotes root growth and allows plants to adequately establish.

Generally, seeds should be planted at a depth two times the width of the seed. Seeds can be sown simultaneously with starts planted in the fall, as many native plants require Utah's cold, wet, winter conditions for germination (known as 'stratification'). Seed treatments (shown on the next page) may be necessary for seeds sown in spring. You may find more information on a plant's required seed treatment on its designated page within this booklet.

Establishing a native landscape, especially from seeds, can be difficult at first. Be patient! Though a native landscape may require more care initially, long-term maintenance is typically lower than that of a non-native landscape. The establishment phase may last as long as three to six years with consistent watering and weeding.

Weeds should be regularly cleared from the garden until the plants are established. Some native plants may need to be controlled to prevent them from taking over an entire area. This can be done by pulling excess plants or clipping seed pods before they release seeds. Mulching with wood chips, gravel, or pine needles can help reduce weeds, retain moisture, and protect root systems from cold winters. Mulch is a much better option than weed fabric, which can harm soil structure and hinder pollinator nesting access over winter.



Seed Stratification Treatments

Seed stratification requirements vary by species. The following are the most common seed treatments used to help seeds break dormancy. For more information, refer to page S263 in the *Dormancy and Germination* article from the Journal of the Society of Ecological Restoration cited at the back of this booklet.

Dry Stratification

Subject dry seeds to freezing temperatures (32 degrees Fahrenheit, or lower) for the recommended period to break dormancy. A refrigerator or freezer may be used.

Moist Stratification

Moist stratification mimics the effect that winter bestows upon seeds and can improve germination. Temperatures and stratification periods are usually specific to each species. However, for most species the process can be achieved by mixing the seeds with a damp substance (e.g., sawdust, vermiculite, clean sand) or placing them on a damp paper towel in a sealable plastic bag and refrigerating for the recommended number of days.

Scarification

There are several ways to scarify seeds. Seeds can be gently rubbed with fine grit sandpaper or a file, nicked with a knife, shaken in a jar full of sand (or other abrasive material), placed in a bowl and covered with boiling water, or placed in a weak acid solution. The best method to use will depend on the seed size and thickness of the seed coat. Care should be taken to avoid damage to the internal reproductive components of the seed.

Seeds ready for planting after moist stratification.

Photo credit: Jennifer Burghardt Dowd



Understanding Plant Water Needs

Most native species (planted in the appropriate habitats) will only require irrigation until they are established. Others will benefit from supplemental water during the hottest parts of the year and during extended dry periods.

Even for the most drought-tolerant plants, establishment watering is helpful for plants to develop healthy root systems.

Watering Frequency

If planting in the spring/summer, follow this guide (adapted from Arizona's Water—Use It Wisely¹⁰ program):

- Weeks 1 & 2: Water every 1-2 days
- Weeks 3 & 4: Water every 3-4 days
- Weeks 5 & 6: Water every 4-6 days
- Weeks 7 & 8: Water every 7 days
- After week 8: Gradually extend the time between watering until plants are established

If planting in the fall, deep water when first planting. Then water as needed (depending on the fall precipitation in your area) until the plants are in winter dormancy.

It typically takes a plant one to three years to establish fully depending on the size and type of plant. In the plant profile section of this book, we have included irrigation guidelines for how often to water each plant in the summer *after* it has become established.



Aspen Fleabane (*Erigeron speciosus*)



Common Sneezeweed
(*Helenium autumnale*)

How Much Water Do My Plants Need?

The amount of water required will depend on plant type, size, and soil type. Plants thrive best if you wet the entire root zone each time you water. It takes more water to wet the root zone of a large tree than a small shrub. Here are a few general guidelines from Arizona's Water—Use It Wisely¹¹ program:

- Water small plants (such as ground covers, cacti, and annuals) to a depth of 1 foot and grasses to a depth of 10 inches
- Water medium plants, such as shrubs, to a depth of 2 feet
- Water large plants, such as trees, to a depth of 3 feet

One inch of water is equivalent to about 0.6 gallons of water per square foot (alternatively, one gallon of water equals 1.6 inches of water per square foot).

To determine the amount of water you need for each plant, multiply the diameter (or canopy) of the plant by the recommended depth of watering. Then, multiply your answer by 0.6 to find how many gallons you need for each plant each time you water.

Consider inserting a soil probe or screw driver into the soil to see how deep you are watering.



A soil probe demonstration

Watch for signs of over and under watering, and adjust as needed.

Signs of Overwatering¹²

- Leaf yellowing
- Wilting
- Excessive vegetative growth
- Algae and/or mushrooms on or around plants (specifically for plants that require dry conditions)

Signs of Underwatering¹³

- Leaves that yellow, brown, and drop prematurely
- Curled, wilted, or scorched leaves
- Stem or branch die back



Drought damage to maple (Robert L. Anderson, USDA Forest Service, Bugwood.org)



Overwatered rudbeckia (University of Maryland Extension, <https://tinyurl.com/5e6s8kjj>)



Dieback of Japanese lilac caused by drought (William Fountain, University of Kentucky, Bugwood.org)



Overwatered pine (William Fountain, University of Kentucky, Bugwood.org)

Irrigation Types and System Output

After understanding your plant's watering needs and frequency, you will need to consider the output of your irrigation system so you can apply the correct amount of water. Remember to group plants with similar water needs (also known as hydrozoning) for the most efficient irrigation.

Sprinkler Systems

- Sprinklers can use 4-30 gallons of water a minute
- Easily determine your system output through a catch cup test (instructions can be found online through USU's Center for Water Efficient Landscaping, CWEL¹⁴ or USU's free water check program)¹⁵
- Water early in the morning or evening to reduce water loss due to evaporation
- Split watering times into two or more sessions if you see water running from your yard
- Adjust your system as seasons change to apply the right amount of water

Drip Irrigation

- Use similar practices to sprinkler irrigation
- Drip irrigation supplies 0.5-4 gallons of water per hour
- Due to its efficiency and the little amount of water lost to evaporation, it is a good choice for water conservation



Drip irrigation



Sprinkler head watering a lawn



Hand watering with a hose



Irrigation canal

Hand Watering

- The simplest and most common irrigation system is a bucket, garden hose, or a portable sprinkler
- Easy to see how much water you are applying
- Water can easily run off if too much is applied at once
- Time-intensive

Bubblers

- Flow rates are typically around 2 gallons per minute
- Flood the entire root system
- Water is easily captured by building a border or berm of soil around the plant

Flood Irrigation

- One of the oldest types of irrigation
- Low tech and low initial investment
- Inefficient and experiences high amounts of evaporation, infiltration, and runoff
- Difficult to see how much water each plant is getting

Long-Term Maintenance

Once a native landscape is established, long-term maintenance is minimal. It is important to remember that insects that may have been previously considered 'pests' may actually contribute to the health of our gardens. Garden maintenance should include leaving fallen leaf debris to provide habitat for overwintering insects and dried seed heads for birds. Fallen leaves also naturally enrich the soil as they decay. Minimize disturbance to overwintering insects by waiting until late spring (or after temperatures are consistently around 55 degrees Fahrenheit for one week) to remove the dried seed heads, stalks, and leaves from the garden.



Dried seed heads provide winter interest and a vital food source for birds.




A common garden pest, the tomato hornworm, is actually the larvae of an important native pollinator, the five-spotted hawkmoth.



Leaf litter provides soil nutrients and habitat for ground nesting bees.


Plant Profile Key

Habitat Type



Desert Foothills Wetland Mountain

Bloom Season



Spring Summer Fall

Yellow Beeplant
Cleome lutea




Profile: Yellow beeplant is a branching, annual herb with bright yellow flowers, often found in desert habitats. It is the host plant for cabbage butterfly (*Pieris protodice*) larvae. Records show that the Navajo people used this plant both ceremonially and to help with ant bites.³⁷

Water: Very low. Irrigation is not required, once established.

Soil: Sandy to loamy.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in fall to early summer. Germination is best if above 45 degrees Fahrenheit.

Maintenance: Placing stakes or planting next to a fence can help keep plants upright. Cut to the ground once plants show signs of browning and drying. After the seeds have been dispersed, the dried stalks and leaves may be chopped up for mulch.

Landscape use: Wildflower, pollinator gardens, background plantings, borders.

ANNUAL WILDFLOWERS

27



Plant Size

USDA
Hardiness
Zone

Bloom Time

Plant Type

Light Requirements



Wildlife Supported





Desert Marigold

Baileya multiradiata



H X W
1-2' X 1-2'

Also short-lived perennial



Profile: Desert marigold provides year round interest and thrives in poor, dry soils and extreme heat. It is the host plant for the desert marigold moth (*Schinia miniana*). Records show that Puebloan people historically mixed the plant in with clay when making adobe. Others may have used the plant as a deodorant.¹⁶

Water: Very low. Irrigation is not required, once established.

Soil: Sandy and/or rocky, alkaline soil.

Propagation: Plant outside in spring or summer. Pretreatment of seeds is not necessary. Germination may be improved by two weeks of cold moist stratification.

Maintenance: Prefers inorganic mulches such as gravel or decomposed granite. Reseeds readily. Clip seed heads to prevent spread or leave them for winter interest and as a food supply for birds. Cut down stalks in early spring.

Landscape use: Desert gardens, xeriscapes, rock gardens, borders, pollinator gardens, naturalistic gardens, border plantings.



Yellow Beeplant

Cleome lutea



H X W
1-5' X 1'



Profile: Yellow beeplant is a branching, annual herb with bright yellow flowers, often found in desert habitats. It is the host plant for cabbage butterfly (*Pieris protodice*) larvae. Records show that the Navajo people used this plant both ceremonially and to help with ant bites.¹⁷

Water: Very low. Irrigation is not required, once established.

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Maintenance: Placing stakes or planting next to a fence can help keep plants upright. Cut to the ground once plants show signs of browning and drying. After the seeds have been dispersed, the dried stalks and leaves may be chopped up for mulch.

Landscape use: Wildflower, pollinator gardens, background plantings, borders.





Rocky Mountain Beeplant

Cleome serrulata



H X W
2-6' X 1-3'



ANNUAL WILDFLOWERS

Profile: Rocky Mountain beeplant is a showy, purple wildflower often found in dry or disturbed places. This nectar-rich plant is extremely attractive to pollinators and is the host plant to the checkered white butterfly (*Pontia protodice*) larva. It often has an unpleasant odor. Historically, it was an important food source for indigenous tribes in the southwest, including the Apache, Goshute, Hopi, and Navajo peoples.¹⁸

Water: Very low. Irrigation is not required, once established.

Soil: Sandy to loamy.

Propagation: Treat seeds with a 30- to 60-day cold moist stratification period for spring planting or plant seeds outside in the fall.

Maintenance: After bloom period, allow dead foliage to remain for winter visual interest, wildlife cover, and forage during the colder months. Cut back dead foliage in the spring.

Landscape use: Wildflower, pollinator gardens, background plantings, borders.



Annual Sunflower

Helianthus annuus



H X W
2-10' X 2-4'



Profile: These common, prolific flowers are often found growing in disturbed sites. Sunflowers provide quality habitat for many wildlife. Cultivated varieties are used for the production of sunflower oil and seeds. This plant is allelopathic, negatively impacting the growth of neighboring plants. Research is ongoing on the sunflower's allelopathy potential as a form of weed control.¹⁹

Water: Very low. Irrigation is not required, once established.

Soil: Sandy to loamy.

Propagation: Soak seeds in water for 18 hours or lightly scarify. Plant in the fall or spring once soils have warmed. Plants should be spaced 10-30 inches apart.

Maintenance: Low maintenance. Cut last year's stem back to ground level in the spring. Deadheading will not extend flowering.

Landscape use: Edible gardens, pollinator gardens, wildflower gardens, borders, mass plantings, specimen plantings.





Yerba Mansa

Anemopsis californica



H X W
0.5' X 2'



PERENNIAL WILDFLOWERS

Profile: This unique, aromatic, mat-forming plant produces small, erect, white “flowers” (there are no true petals, only petal-like bracts). It grows in wet, boggy areas and is tolerant of salinity and alkaline soils. Yerba mansa has a long history as a medicinal plant; it can still be readily purchased as a dried herb or extract today.

Water: High. Summer irrigation up to 4x/month, or as needed, once established. Keep moist.

Soil: Tolerant of a variety of moist soils.

Propagation: Divide stolons or start seeds indoors using a heated seed-starting mat. It may take several weeks for the seeds to germinate.

Maintenance: Keep soil moist during growing season. Can tolerate soil drying out once dormant.

Landscape use: Good choice for the edge of water features or in boggy areas. The foliage turns a dark red in the fall.



Swamp Milkweed

Asclepias incarnata



H X W
3-5' X 2-3'



PERENNIAL WILDFLOWERS

Profile: Swamp milkweed is a moisture-loving perennial that can be found along swampy areas, ditches, and stream banks. It is a host for monarch (*Danaus plexippus*) and queen butterfly (*Danaus glippus*) larvae. The species contains a milky sap and is toxic to livestock and wildlife if eaten in large quantities; however, it is typically not consumed by choice.

Water: Medium to high. Summer irrigation up to 4x/month, or as needed, once established. Can be drought-tolerant, but prefers moist soils.

Soil: Clay to sandy soil types with standing to moderate drainage.

Propagation: Cold moist stratify seeds for 14- to 30-days or plant outside in fall to early spring. Plants can also be divided.

Maintenance: The first round of flowers can be deadheaded to prolong blooming. Cut back stalks in late fall or winter, leaving at least 6 inches to provide winter insect habitat. Swamp milkweed can attract the orange milkweed aphid. Aphids can be controlled with a soapy water spray or high pressure water spray.

Landscape use: Rain gardens, pollinator gardens, wet areas, soils with heavy clay.





Showy Milkweed

Asclepias speciosa



H X W
1-5' X 1-3'



PERENNIAL WILDFLOWERS

Profile: Showy milkweed is a branching plant with wide leaves and clusters of star-shaped pink flowers. It is found in prairies, meadows, and along roadsides and was widely used by many indigenous tribes as a source of food, medicine, and fiber.²⁰ It was grown during World War II in mass to fill pillows and lifejackets with the fluffy silk (coma) found inside the seed pods. This plant is a host for monarch (*Danaus plexippus*) and queen butterfly (*Danaus glippus*) larvae. The milky sap is toxic to livestock and wildlife if eaten in large quantities; however, it is typically not consumed by choice.

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Well-drained clay, loam, and sand. Can grow in coarse, medium, and fine soils.

Propagation: Plant seeds outside in fall to early spring or treat with a 1- to 4-month cold moist stratification period.

Maintenance: If a clump becomes too large, excess rootstock can be pruned during the winter when the plant is dormant. To prevent the plant from reseeding, cut off the pods before they open. Leave hollow stalks during the winter to provide nesting habitat for native bees and other insects. Delay cutting in the spring to allow for emergence of insects.

Landscape use: Pollinator gardens, naturalistic gardens, mass plantings.



Horsetail Milkweed

Asclepias subverticillata



H X W
1-2' X 1-1.5'



Profile: This plant has erect stems with thin, whorled leaves and greenish-white flowers that can be branched or unbranched. It grows in fields, along roadsides, or in other disturbed areas and is a host for monarch (*Danaus plexippus*) and queen butterfly (*Danaus glippus*) larvae. It was used as a source of medicine, food, and fiber for the Apache, Hopi, and Navajo tribes.²¹ This plant is toxic to livestock.

Water: Very low. Irrigation is not required, once established.

Soil: Coarse to loamy.

Propagation: Pretreatment of seeds is not necessary, but 15- to 30-days of cold moist stratification improves germination rates. Direct seeded in late fall, no more than 1/4 inch deep. Propagate by rhizome cuttings while plant is dormant (October-February).

Maintenance: If desired, cut back stalks in late fall or winter, leaving at least 6 inches to provide winter insect habitat. Cut down any remaining tall stalks in spring to make room for new growth.

Landscape use: Pollinator gardens, naturalistic gardens, mass plantings, xeriscapes





Aspen Fleabane

Erigeron speciosus



H & W
1-2' X 1-2'



PERENNIAL WILDFLOWERS

Profile: Aspen fleabane is a low, clump-growing plant with light pink or purple showy blooms. The leaves turn red in the fall. The plant produces a fluffy white seed head after blooming. It grows in both wet and dry habitats. Historically, a decoction of the plant was used by the Navajo tribe for menstrual pain and as a contraceptive.²² It is the host plant for the northern checkerspot butterfly (*Chlosyne palla*).

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Sand to loam.

Propagation: Pretreatment of seeds is not necessary. Plant outside in spring or summer at about 1/8 inch deep. Can also propagate by dividing plants. May not flower the first year.

Maintenance: Cut back once flowering period is over, leaving at least 6 inches to allow for winter insect habitat.

Landscape use: Beds, borders, cottage gardens, cut flower gardens.



Hummingbird Trumpet

Epilobium canum var. *garrettii*



H X W
1.5' X 1-2'



Photo credit: Colorado State University Extension

Profile: Well-loved for its vibrant flowers and ability to attract pollinators, this plant features tubular, orange-red to scarlet flowers that are particularly attractive to hummingbirds. The semi-evergreen leaves are generally small and lance-shaped. The plant has a trailing or mounding growth habit. Host plant for the white-lined sphinx moth (*Hyles lineata*). Often referred to as "Zauschneria," which was the previously used genus name for the plant.

Water: Very low to low. Summer irrigation 1x/month or less, once established.

Soil: Clay to rocky soil types with slow to fast drainage.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in spring or summer.

Maintenance: Prune leggy stems to promote bushier growth. Cut clusters of flowers off after they have finished blooming to encourage reblooming.

Landscape use: Hummingbird gardens, naturalistic landscapes, and rock gardens. Its bright flowers and pollinator-attracting attributes make it a standout in summer and fall gardens.





Sulphur-Flower Buckwheat

Eriogonum umbellatum



H X W
1' X 1-5'



PERENNIAL WILDFLOWERS

Profile: This plant is a variable, shrubby perennial with yellow, white, or orange blooms. It may be spreading or erect. The leaves turn reddish in the fall. The seeds are an important food source for many animals. It is a larval host and nectar source for the lupine blue butterfly (*Plebejus lupini*). The species occurs throughout the western United States and into Canada. It can be found in a variety of habitats including sagebrush steppe and alpine areas. The plant was used medicinally by many indigenous tribes, such as the Paiute, Shoshone, and Navajo.²³

Water: Low. Summer irrigation maximum 1x/month, once established.

Soil: Various soil types with medium to fast drainage.

Propagation: Pretreatment of seeds is not necessary, but germination rate improves with cold moist stratification (up to three months in refrigerator). Plant seeds outside in spring or summer up to 1/8 inch deep.

Maintenance: This species benefits from mulching and can be deadheaded to prolong the blooming period. Leave a few blooms for reseeding, if desired, and also for birds to eat over the winter.

Landscape use: Xeriscapes, rock gardens, borders. Can also be used for erosion control.



Spotted Joe-Pye Weed

Eupatorium maculatum



H X W
4-6' X 3-4'



Profile: This plant features clusters of pink flowers that form at the top of tall stems. The leaves are typically lance-shaped and arranged in whorls along the stem. The plant is fragrant and attracts a large number of pollinators such as butterflies, skippers, moths, and native bees. The caterpillars of several moths feed on the foliage. The plant forms small, clonal colonies from underground rhizomes. It is most suitable for wetland plantings.

Water: Medium to high water requirements. Summer irrigation 4x/month or as needed, once established. Keep moist.

Soil: Sandy loam to rich, silty soils. Prefers moist to wet soils.

Propagation: Pretreatment of seeds is not necessary. Sow indoors in late winter or directly outdoors in the fall. Can also propagate from root divisions and cuttings.

Maintenance: After bloom period, allow dead foliage to remain for winter visual interest, wildlife cover, and forage during the colder months. Cut back dead foliage in the spring.

Landscape use: Wetland plantings, rain gardens, pollinator gardens, naturalistic plantings, fragrance gardens.





Blanket Flower

Gaillardia aristata



H X W
2-3' X 1-2'



Profile: Blanket flower ranges from southern Canada to Utah, Colorado, and South Dakota. It can be found in plains, prairie, woodland, and montane meadow habitat types. This showy plant is low maintenance, drought-tolerant, and a profuse bloomer. The name "Blanket Flower" is derived from the manner in which the plant blankets the habitat when in bloom. It is the host plant for the gaillardia flower moth (*Schinia masoni*) and painted schinia moth (*S. volupia*).

Water: Low. Summer irrigation maximum 1x/month, once established.

Soil: Clay to sandy soil types

Propagation: Pretreatment of seed is not necessary. Plant seeds outside in spring to mid-summer and cover with a thin layer of mulch.

Maintenance: Leave stems through winter to provide visual interest and food for birds. Cut stems down to a mound in spring to make room for new growth.

Landscape use: Colorful borders, rock gardens, wildflower meadows, pollinator gardens.



Utah Sweetvetch

Hedysarum boreale



H X W
1-2' X 1.5'



Profile: A nitrogen-fixing plant commonly found in a variety of habitats, including dry, rocky hillsides and crests, sandy stream valleys, and roadsides. Its range spans throughout the west and into Canada between the elevations of 4,000 and 8,000 feet. It prefers full sun, but can tolerate some shade. The species is an important component of sage grouse habitat. The roots were used medicinally by the Ute tribe.²⁴

Water: Low. Summer irrigation maximum 1x/month, once established.

Soil: Prefers sandy, rocky, and well-drained loamy soils.

Propagation: Moist stratify the seeds for 30- to 45-days at 34-41 degrees Fahrenheit or plant outside in the fall. Plant seeds on the soil surface and cover with a thin layer of sand.

Maintenance: Little maintenance is required. Although the plant is drought tolerant, water occasionally until it becomes established. Mature plants tolerate drought well but will perform better with supplemental water.

Landscape use: Wildflower gardens, naturalistic landscapes.





Sneezeweed

Helenium autumnale



H X W
3.5 X 3'



PERENNIAL WILDFLOWERS

Profile: Sneezeweed is a bright, cheerful-looking plant that grows in clumps and produces daisy-like flowers. It is generally resistant to pests and diseases making it a reliable choice for gardeners. It is host plant for the dainty sulphur butterfly (*Nathalis iole*). The species is native throughout the continental United States and most of Canada. It grows in wet to moist soils in meadows, marshes, soggy thickets, and margins of streams, creeks, ponds, and ditches. It is toxic to livestock, but not preferentially eaten.

Water: Medium to high. Prefers consistently moist soil, but moderately drought-tolerant once established. Summer irrigation up to 4x/month, once established.

Soil: Loamy to silty soils that are high in organic matter.

Propagation: Cold moist stratify seeds for 14- to 30-days or plant outside in fall to early spring up to 1/8 inch deep.

Maintenance: Prune stem tips in the spring to promote denser growth. Cut seed pods before they open if reseeding is not desired.

Landscape use: Late-season color in wildflower gardens, mixed borders, and rain gardens.



Oneflower Sunflower

Helianthella uniflora



H X W
2-3' X 1-2'



Profile: Oneflower sunflower is recognized for its unique solitary flower per stem. It has a woody stem and aromatic, elongated, lance-shaped leaves that have a gray-green color. The plant is native to western North America and prefers open exposures on hillsides in sagebrush, pinyon-juniper, mountain brush, ponderosa pine, aspen, and spruce-fir communities. It can be found between about 3,900 and 10,500 feet. It was used medicinally by the Paiute and Shoshone tribes.²⁵

Water: Low. Summer irrigation maximum 1x/month, once established.

Soil: Well-draining, rocky or sandy soil.

Propagation: Cold moist stratify seeds 45- to 90-days to improve germination rate. Plant outside in spring or summer on soil surface or up to 1/8 inch deep.

Maintenance: Care should be taken during the first few years not to trample the plants. Once established, oneflower sunflower is fairly resilient and resistant to trampling and grazing. At this stage, it is also relatively competitive against weeds.

Landscape use: Wildflower gardens, rock gardens, xeriscapes, flower beds, and borders.





Nuttall's Sunflower

Helianthus nuttallii



H X W
3-8' X 1-2'



PERENNIAL WILDFLOWERS

Profile: This fall blooming flower provides important nectar for migrating monarchs and other pollinators, such as bees and moths. The seeds are consumed by a number of birds, especially goldfinches. The plant spreads by short, shallow rhizomes. It can be found growing throughout the western United States in moist to wet meadows, prairies, and open spaces. This plant was used as a gastrointestinal aid by the Navajo tribe.²⁶

Water: Medium to high. Summer irrigation up to 3-4x/month, once established.

Soil: Clay to loam with good to moderate drainage.

Propagation: Cold moist stratify the seeds for 45-days or plant outside in the fall at a depth of 1/8 inch.

Maintenance: Removing spent flowers can encourage continued blooming. This can also help prevent self-seeding if you want to control its spread. Seeds can also be left for birds. Leave stalks in winter for wildlife habitat and cut to the ground in the spring.

Landscape use: Late season color, pollinator gardens, naturalistic landscapes, cottage gardens, back of garden beds, as a focal point.



Showy Goldeneye

Heliomeris multiflora



H X W
1-2' X 1'



Profile: Showy goldeneye features profuse clusters of bright yellow, daisy-like flowers with a central disc and ray florets. The flowers are held atop sturdy stems, creating a cheerful display. The leaves are typically lance-shaped and alternate along the stem. It grows in bushy clumps, is long-lived, and spreads readily by seed. It grows throughout the western United States and into Mexico. It can be found in a variety of habitats, including grasslands, meadows, and open woodlands. This plant was used as a food source for the Goshute and medicinally by the Navajo.²⁷

Water: Very low to low. Maximum 1x/month or less, once established.

Soil: Loamy to sandy soil types with fast drainage.

Propagation: Plant seeds outside in spring or summer. Pretreatment of seed is not necessary. Germination may be improved by two weeks of cold moist stratification.

Maintenance: Deadheading and supplemental watering in midsummer will prolong the blooms. After flowering, plants may be cut off at the base unless reseeding is desired.

Landscape use: Wildflower gardens, pollinator gardens, xeriscapes, mixed borders, cut flower gardens, rock gardens, naturalized areas.





Salt Heliotrope

Heliotropium curassavicum



H X W
1-2' X 2'



PERENNIAL WILDFLOWERS

Profile: Salt heliotrope features small, clustered flowers that are white or pale lavender and are arranged in spirals along the stems. The leaves are small, fleshy, and may have a grayish-green tint. It can be found on beaches, dunes, and saline habitats. It often grows in wetland areas that can be flooded, followed by a drying period. It can grow in prostrate or shrubby forms. It is the host plant for the eight-barred lygropia moth (*Lygropia octonalis*). The Paiute and Shoshone tribes used this plant medicinally, including as a diuretic and to help soothe sore throats.²⁸

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Sandy to loamy soil types with fast drainage. Often grows in saline or alkaline soils.

Propagation: Pretreatment of seeds is not needed. Plant seeds outside in fall or spring.

Maintenance: Cut back dead foliage from the previous year in the spring.

Landscape use: Useful for challenging salty and sandy areas. Its fragrant flowers and unique appearance make it an interesting addition to the landscape.





Lewis Flax

Linum lewisii



May - Jul



H X W
1-3' X 1-3'



Profile: Lewis flax features delicate, sky-blue, cup-shaped flowers with five petals. Its native range spans from Alaska to California and east as far as Minnesota. It can be found growing in a variety of habitats including grasslands, sagebrush, pinyon-juniper, mountain brush, and aspen communities and in openings in woodlands. This plant was used medicinally by the Goshute, Paiute, Shoshone, and Navajo tribes.²⁹ Be sure to seek out the Maple Grove variety when possible, as that is the true Utah native.

Water: Low to medium. Summer irrigation maximum 2x/month, once established.

Soil: Sandy or loamy soils.

Propagation: Pretreatment of seeds is not necessary. Plant outside in fall, spring, or summer. Plant up to 1/4 inch deep.

Maintenance: Leave spent flower stems to provide winter interest and wildlife habitat. Cut down dead vegetation to make room for new growth in the spring.

Landscape use: Wildflower gardens, naturalistic gardens, cottage gardens, borders plantings, cut flower gardens, xeriscapes.





Rough Bugleweed

Lycopus asper



H X W
2.5' X 1-3'



PERENNIAL WILDFLOWERS

Profile: Rough bugleweed has small, dense clusters of white flowers pollinated by bees and flies. This plant has long, slender, horizontal rhizomes and roots. The rhizome ends in a tuber tip which will sprout next year's stem. Rough Bugleweed is found throughout most of North America. It grows in marshes, irrigation canals, stream banks, and other wet sites at 4,000–6,000 feet elevation.

Water: High. Summer irrigation 4x/month or as needed, once established. Keep moist.

Soil: Moist, sandy, loamy, or clay soils.

Propagation: Treat seeds with a one-month cold moist stratification. Planting should be done in early spring and is sometimes successful if done in the fall.

Maintenance: After bloom period, allow dead foliage to remain for winter visual interest and wildlife cover and forage during the colder months. Cut back in the spring.

Landscape use: In wet areas, along the edge of ponds or water features, rain gardens, cut flower gardens.



Desert Four O'clock

Mirabilis multiflora



H X W
1-2' X 3-6'



PERENNIAL WILDFLOWERS

Profile: Desert four o'clock blooms in the evening attracting many nocturnal insects, such as the great ash sphinx (*Sphinx chersis*) and Achemon sphinx (*Eumorpha achemon*) moths. It also attracts bees and hummingbirds at dawn. It is native to the southern United States and can thrive in harsh, dry conditions. It is usually found among pinyon pines and junipers at elevations of 2,100–7,500 feet. Southwestern Indigenous tribes used this plant in a variety of ways, but primarily as a medicinal plant.³⁰

Water: Very low. Summer irrigation maximum 1x/month or less, once established.

Soil: Dry and rocky or sandy soil.

Propagation: Treat seeds with a 30- to 60-day cold moist stratification at 34–41 degrees Fahrenheit or plant outside in fall. Plant seeds on soil surface and cover with a thin layer of sand.

Maintenance: Cut back dead foliage from the previous year in the spring.

Landscape use: Ground covers, slopes, beds, and borders.



Hooker's Evening Primrose

Oenothera elata



H X W
2-5' X 2-3'



Profile: True to its name, this evening primrose's flower opens in the evening and closes late morning. It is pollinated by bees, moths, and butterflies—particularly, the sphinx moth. It is a prolific seeder but does not bloom until the second year. While typically occurring in wetter habitats, the species can be drought-tolerant due to its deep taproot. The Paiute and Navajo used this plant medicinally for colds, dermatologically, and in ceremonial medicine.³¹ The oil from the seeds is used in cosmetics and the majority of the plant is edible.

Water: Low to high. Summer irrigation up to 1-4x/month, once established.

Soil: Clay to sandy soil types with standing to moderate drainage.

Propagation: Pretreatment of seeds is not necessary; a 30-day cold moist stratification will improve germination. Plant outside in fall to spring. Plant on soil surface or up to 1/16 inch deep.

Maintenance: Leave foliage standing in the fall; the hollow stems may be beneficial to overwintering insects, such as native bees. Delay cutting in the spring (or bundle and hang the stems) to allow for the emergence of insects.

Landscape use: Naturalistic gardens, mass plantings, rain gardens, pollinator gardens



Dusty Beardtongue

Penstemon comarrhenus



H X W
1-4' X 1-3'



PERENNIAL WILDFLOWERS

Profile: Dusty beardtongue has narrow flower tubes that broaden to a wide throat. The tubular, nectar-rich flowers attract hummingbirds, bees, butterflies, and other pollinators. It can be found in Utah, Colorado, Nevada, Arizona, and New Mexico within woodlands or open slopes between 5,000-9,000 feet elevation.

Water: Very low to low. Summer irrigation maximum 1x/month or less, once established.

Soil: Rocky to loamy soil types with fast drainage.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in spring or summer.

Maintenance: Penstemons require little pruning but removing stems after flowering is complete can promote new foliage and prolong flowering.

Landscape use: Pollinator gardens, borders, beds, xeriscapes, rock gardens, cut flower gardens.





Firecracker Penstemon

Penstemon eatonii



H X W
2-3' X 3'



PERENNIAL WILDFLOWERS

Profile: This plant features bright scarlet flowers that hummingbirds love. It is a host plant of the Arachne checkerspot (*Poladryas arachne*), Chalcedon checkerspot (*Euphydryas chalcedona*), and common buckeye (*Junonia coenia*) butterflies. It is native to the western United States from California to the Rocky Mountains. It grows in many types of desert, woodland, forest, and open plateau habitats. This plant was used ceremonially by the Hopi tribe and for various medicinal uses by the Navajo and Shoshone.³²

Water: Very low to low. Summer irrigation maximum 1x/month or less, once established.

Soil: Sandy soil types with moderate to fast drainage.

Propagation: Pretreatment of seed is not necessary. Plant seeds outside in the fall or spring.

Maintenance: Cut back faded foliage in the fall by a third. After the last frost in the spring, cut the remaining foliage back hard.

Landscape use: Pollinator gardens, borders, beds, xeriscapes, rock gardens, cut flower gardens.



Thickleaf Penstemon

Penstemon pachyphyllus



H X W
1-2' X 8-12"



PERENNIAL WILDFLOWERS

Profile: Thickleaf penstemon readily colonizes following fire and tolerates poor soils. It is also referred to as Utah bluebells. It can be found throughout the western states of Wyoming, Colorado, New Mexico, Arizona, Nevada, and Utah. It is found in salt desert shrub, sagebrush-grass, pinyon-juniper, mountain brush, and conifer communities.

Water: Very low to low. Summer irrigation maximum 1x/month or less, once established.

Soil: Loamy to sandy or gravelly soil types with moderate drainage.

Propagation: Treat seeds with a 14- to 28-day cold moist stratification or plant outside in early spring.

Maintenance: Penstemons require little pruning but removing stems after flowering is complete can promote new foliage. Deadheading can prolong flowering.

Landscape use: Pollinator gardens, borders, beds, xeriscapes, rock gardens, cut flower gardens.





Palmer's Penstemon

Penstemon palmeri



H X W
3-5' X 2'



Profile: Palmer's penstemon is one of the few scented flowers in the family of penstemons. It can be found throughout the western United States on slopes, washes, canyons, and alluvial fans of deserts. It readily reseeds making it great for colonizing harsh sites. The Navajo historically used this plant to make a poultice for snake bites.³³

Water: Very low to low. Summer irrigation maximum 1x/month or less, once established.

Soil: Loamy to sandy soil types with fast drainage.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in fall to early summer.

Maintenance: Shear off the fading flowering stalks to maintain the appearance of the evergreen foliage (leave a few stalks if reseeding is desired). Mulch with gravel or pine needles in arid climates.

Landscape use: Pollinator gardens, borders, beds, xeriscapes, rock gardens, cut flower gardens.



Rocky Mountain Penstemon

Penstemon strictus



H X W
2-3' X 3'



Profile: Rocky Mountain penstemon features bright bluish-purple flowers which initially grow on both sides of the stalk, but eventually orient to only one side. It occurs throughout New Mexico, Colorado, Utah, southern Wyoming, and northeastern Arizona.

Water: Very low to low. Summer irrigation maximum 1x/month or less, once established.

Soil: Rocky, sandy, or loamy.

Propagation: Treat seeds with 14- to 45-day cold moist stratification or plant outside in fall to early spring. Plant on soil surface and cover with a thin layer of soil. May take up to 3 weeks to germinate.

Maintenance: Shear off the fading flowering stalks to maintain the appearance of the evergreen foliage (leave a few stalks if reseeding is desired). Mulch with gravel or pine needles in arid climates.

Landscape use: Pollinator gardens, borders, beds, xeriscapes, rock gardens, cut flower gardens.



Saltmarsh Fleabane

Pluchea odorata



H X W
2-4' X 2-3'



PERENNIAL WILDFLOWERS

Profile: Saltmarsh fleabane is a tall, short-lived perennial with woody stems and aromatic leaves. Its pink to lavender flowers are small and clustered, and it prefers moist to wet habitats. This plant is native to wetlands and coastal areas of the Americas.

Water: High water requirements. Prefers wetter conditions. Summer irrigation up to 4x/month, or as needed, once established. Keep moist.

Soil: Moist, loamy or clay soils.

Propagation: Pretreatment of seeds is not necessary. Surface sow or lightly cover seeds with growing medium. Plants can also be divided.

Maintenance: During the growth period of the plant, water regularly and trim leaves that are yellowing or drying. Once established the plant does not require much maintenance.

Landscape use: Can be a valuable addition to naturalistic landscapes, wetland gardens, and areas with poorly drained soils. Its ability to tolerate wet conditions makes it an important component of ecosystems that experience seasonal flooding.



Prairie Coneflower

Ratibida columnifera



H X W
1-3' X 1.5'



Profile: The prairie coneflower's bloom resembles a sombrero with a drooping brim. For this reason, it is also known as Mexican Hat. The flowers can be yellow or red in color. The plant withstands competition well and is fast-growing. It is highly resistant to deer, high in nectar, and provides seed for birds. The prairie coneflower ranges from Mexico to Canada throughout most of the United States. It occurs in prairies, plains, roadsides, and disturbed areas. The Navajo used a cold infusion of this plant for fever.³⁴

Water: Low. Summer irrigation up to 2x/month, once established.

Soil: Sandy to gravelly soil types with fast drainage.

Propagation: Cold stratify seeds for 30-60 days for spring planting or spread seeds in the fall.

Maintenance: This species benefits from mulching and can be deadheaded to prolong the blooming period. Readily reseeds. Clip seed pods before they open to limit spread. Otherwise, leave a few blooms for reseeding, if desired, and also for birds to eat over the winter.

Landscape use: Wildlife/pollinator gardens, xeriscapes, meadows, garden beds, borders, mass plantings, deer resistant.



Water Groundsel

Senecio hydrophilus



H X W
3-7' X 1-2'



Profile: Water groundsel can be found throughout the mid to northern part of the United States. It grows in swamps, marshes, and other wet environments, including standing water. It is pollinated by a large number of native bumble bees and butterflies.

Water: Medium to high. Summer irrigation up to 4x/month, or as needed, once established.

Soil: Clay, silt, or loamy soil types with standing to moderate drainage. Tolerant of salinity.

Propagation: Plant seeds outside in spring or summer. Pretreatment of seeds is not necessary, but germination may be improved by 2 weeks of cold moist stratification.

Maintenance: Cut back faded foliage in the fall by a third. The hollow stems provide overwintering habitat for native bees and other insects. Spring clean-up should be delayed or the stems can be bunched and hung to allow emergence of overwintering insects. Clip seed pods before they open if reseeding is not desired.

Landscape use: Rain gardens, ponds, along creeks, or the edge of water features.



Western Sea Purslane

Sesuvium verrucosum



H X W
1-2' X 2-6'



PERENNIAL WILDFLOWERS

Profile: Western sea purslane is a somewhat variable, spreading succulent that can grow in a variety of challenging conditions. It is adorned with small, star-shaped, pink flowers. Native to the American southwest, east to Kansas, Arkansas, and Louisiana, and south to northern Mexico. It is a host plant for the western pygmy blue butterfly (*Brephidium exilis*).

Water: Low to high. Drought-tolerant, once established. Irrigate up to 1-4x/month in summer, once established.

Soil: Sandy, dry, moist, or wet, well-drained soils. Tolerant of saline and alkaline soils.

Propagation: Pretreatment of seeds is not necessary. Sow seeds in early to mid-spring or propagate from stem cuttings in late summer.

Maintenance: Prune to keep shape and control size.

Landscape use: Cascade over rock walls, the edge of pots, or use as a ground cover. Useful in areas with high salinity and for soil stabilization. Can grow in shallow standing water or xeric gardens.





Canada Goldenrod

Solidago canadensis



H X W
2-6' X 2-3'



PERENNIAL WILDFLOWERS

Profile: This species is a fall-blooming plant with showy, yellow flowers that are visited by a wide array of pollinators, including migrating monarchs. Birds feed on the seeds during the fall and winter. The hollow stems are useful for wintering insects. Native to the northeastern and north-central United States, it is found in open sites, hillsides, stream banks, open woods, and disturbed areas. The Goshute and Navajo tribes used it as a food source.³⁵

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Well-drained, sandy, rocky, and clay soils.

Propagation: Treat seeds with a 45-day cold moist stratification or plant seeds outside in the fall.

Maintenance: Leave foliage in the fall for wintering birds (forage, perches) and to provide visual interest. This plant has a tendency to spread in ideal conditions. However, its shallow root system makes it easy to control. Cut back dead foliage in the spring.

Landscape use: Rain gardens, naturalized meadows, pollinator gardens, winter interest, edible landscapes.



Desert Globemallow

Sphaeralcea ambigua



H X W
3' X 2-4'



Profile: Desert globemallow produces beautiful orange flowers that provide habitat for a variety of native bees and butterflies. It blooms mostly in the spring but will bloom throughout the season in response to precipitation and watering. It is native to Utah, California, Nevada, Arizona, and northwest Mexico. It grows among desert shrubs on dry, rocky slopes and along edges of sandy washes. The Shoshone used this plant medicinally and added it to clay to make cups.³⁶

Water: Very low. Irrigation is not needed, once established.

Soil: Adaptable, but prefers dry and alkaline soil.

Propagation: Treat seeds with a 60-day cold moist stratification period or plant outside in fall to early winter.

Maintenance: Prune after blooming to prevent the plant from becoming woody.

Landscape use: Low maintenance gardens, pollinator gardens, xeriscapes, desert landscapes, waterwise cottage gardens, beds, and borders.



Gooseberryleaf Globemallow

Sphaeralcea grossulariifolia



H X W
2-3' X 1-2'



Profile: Gooseberryleaf globemallow is drought-resistant and remains green during the summer. It readily seeds on disturbed, exposed areas in harsh environments. It occurs throughout the western United States in dry plains, open desert washes, playas, hillsides, foothills, mesas, and canyons from 2,600–7,500 feet. The species is a larval host for the white-lined sphinx moth (*Hyles lineata*) and several skipper and lady butterflies. It is a valuable species for native bees. The Hopi had various medicinal uses for this plant.³⁷

Water: Very low. Irrigation is not needed, once established.

Soil: Clay to gravel soils. It can tolerate alkaline soils and is often associated with volcanic soils.

Propagation: Treat the seeds with a 30- to 90-day cold moist stratification period or plant outside in fall to early winter.

Maintenance: Little maintenance is required. Cut last year's stems back to the ground level in spring. Mulch with gravel or pine needles.

Landscape use: Low maintenance gardens, pollinator gardens, xeriscapes, desert landscapes, waterwise cottage gardens, beds, and borders.





Munro's Globemallow

Sphaeralcea munroana



H X W
8-32" X 1-2'



PERENNIAL WILDFLOWERS

Profile: The leaves of Munro's globemallow are covered in fine, white hairs that minimize the effects of sun and wind exposure. It is native to the Great Basin and surrounding regions of the western United States. It grows in sagebrush, desert flats, and mountain slopes and is a larval host for the white-lined sphinx moth (*Hyles lineata*), common checkered-skipper (*Pyrgus communis*), and northern white-skipper (*Heliopetes ericetorum*) butterfly. The plant is valuable to native bees. The Goshute made a paste from the plant to coat pottery.³⁸

Water: Very low. Irrigation is not needed, once established.

Soil: Rocky, sandy, to loamy soil types with fast drainage.

Propagation: Treat seeds with a 30- to 45-day cold moist stratification period or plant outside in the fall. Plant seeds on the soil surface and cover with a thin layer of sand.

Maintenance: Little maintenance is required. Cut last year's stems back to the ground level in spring. Deadheading will not extend flowering. Mulch with gravel or pine needles.

Landscape use: Low maintenance gardens, pollinator gardens, xeriscapes, desert landscapes, waterwise cottage gardens, beds, and borders.





White Heath Aster

Symphotrichum ericoides



H X W
2-3' X 1-2'



PERENNIAL WILDFLOWERS

Profile: The white heath aster has a bushy appearance and blooms in bunches of many, small flowers through the late summer to early fall. This plant is a great nectar source for late season pollinators and hosts the pearl crescent butterfly (*Phyciodes tharos*) and wavy-lined emerald moth (*Synchlora aerata*). It occurs throughout most of the United States in open, rocky woods, prairies, and disturbed areas. Rhizomatous and self-seeds readily.

Water: Very low to low. Summer irrigation maximum 1x/month, once established.

Soil: Sandy to rocky soils preferable, but is tolerable to clay and eroded soils.

Propagation: Pretreatment of seeds is not necessary, but germination rates may improve with up to two months cold moist or dry stratification. Start seeds indoors or press seeds into soil surface in the fall. Requires light to germinate.

Maintenance: The plants are low maintenance. Removing spent blooms encourages later reblooms. The plants may benefit from staking.

Landscape use: Borders, pollinator gardens, rain gardens, waterwise cottage gardens, cut flower gardens.





Perky Sue

Tetranneuris acaulis



H X W
8-12" X 12-18"



Profile: Perky Sue is a tufted, compact, evergreen plant that forms a basal rosette. It is heat, cold, and drought-tolerant making it ideal for sunny rock gardens and borders. The peak blooming period is during the cooler seasons. "Tetranneuris" is Greek for "four nerves" which refers to the nerves on the ray flower petals. The plant is widespread throughout the western and central United States and can be found in foothills, sub-alpine regions, high prairies, plains, and saltbush scrub communities. The Hopi used this plant medicinally for hip and back pain during pregnancy.³⁹

Water: Very low to low. Summer irrigation maximum 1x/month or less, once established.

Soil: Adaptable to almost any soil type. Chalk, loam, sand, well-drained soils.

Propagation: Pretreatment of seeds is not necessary. Avoid overwatering in the seedling stage. Seedlings should have at least 4 to 5 leaves before transplanting. New plants may also be grown from cuttings.

Maintenance: Does best in well-drained soils and is susceptible to root rot if soil remains moist too long. Due to the long tap root, it does not transplant well.

Landscape use: Borders, xeriscapes, rock gardens, containers. Provides long-season blooms.





American Germander

Teucrium canadense



H X W
1-3' X 1.5-3'



Profile: American germander is a rhizomatous plant with mint-scented leaves and spike-like clusters of purple flowers. It is native to most of the United States and Canada and can be found growing along the edges of rivers, marshes, and forests.

Water: Moderate to high. Summer irrigation up to 3-4x/month, once established.

Soil: Clay to sandy soil types with moderate drainage.

Propagation: Cuttings or dividing plants is preferred over starting from seed. Pretreatment of seeds is not necessary, but a 28-day cold moist stratification will improve germination. Or, plant seeds outside in fall to early spring.

Maintenance: Can be cut back during winter dormancy.

Landscape use: Fragrance gardens, perennial gardens, ground cover, borders, rain gardens, pond edges, woodland gardens.



Blue Vervain

Verbena hastata



H X W
2-5' X 1-2'



Profile: The purple spikes of the blue vervain attract a large variety of native bees, flies, and butterflies. The seeds are a staple for many small mammals and birds. The plant spreads via rhizomes and is native throughout much of the United States. In the west it can be found primarily in Oregon, Idaho, Utah, and Colorado. It grows in many types of moist habitats including meadows, thickets, pastures, river banks, marshes, and river bottoms. It is a host plant for the common buckeye butterfly (*Junonia coenia*).

Water: Low to high. Summer irrigation up to 1-4x/month, once established. Drought-tolerant.

Soil: Clay to sandy soil types with moderate drainage.

Propagation: Pretreat the seeds with a 30- to 60-day cold moist stratification period or plant outside in fall to early winter.

Maintenance: Prune when needed to control growth. Cut back faded foliage in fall or spring. Clip seed heads prior to maturing, if reseeding is not desired.

Landscape use: Rain gardens, pollinator gardens, naturalized meadows, along ponds edges, near streams, cottage gardens, woodland gardens, winter interest.





Indian Ricegrass

Achnatherum hymenoides



H X W
1-3' X 1-2'



Profile: This drought, cold, and wind-tolerant species is excellent for restoration, reclamation, and revegetation. It is the state grass of Utah and serves as a larval host plant for a number of skipper butterflies and the white-lined sphinx moth (*Hyles lineata*). It occurs in all states in the Midwest and western United States from 2,000-10,000 feet. It grows in dry plains and mountainous habitats and in sagebrush, juniper, and ponderosa pine-dominated plant communities. The Apache, Goshute, Hopi, Paiute, and Navajo tribes used the grains from this plant as a food source.⁴⁰

Water: Very low. Summer irrigation up to 2x/month or less, once established.

Soil: Dry, well-drained, sandy soils.

Propagation: Cold moist stratify seeds for 30- to 45-days or plant outside in the fall. Plant up to 1/4 inch deep. May take up 2-3 years to germinate.

Maintenance: Avoid planting with aggressive grasses and forbs. It is moderately fast growing and short-lived, but readily reseeds.

Landscape use: Xeriscapes, rock gardens, pollinator gardens, winter interest.



Sideoats Grama

Bouteloua curtipendula



H X W
2-3' X 1-2'



Profile: Sideoats grama is a warm season bunch or sod-forming grass. The oat-like spikelets line one side of the stem and are consumed by birds. It is the state grass of Texas and is a larval host plant for several skipper butterflies and moths including the green skipper (*Hesperia viridis*) and dotted skipper (*Hesperia attalus*) butterflies. The plant occurs throughout much of North America and grows on mountainous plateaus, rocky slopes, and sandy plains up to 7,000 feet in elevation.

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Medium-textured, well-drained soils. Likes disturbed, igneous, limestone-based sands, loams, and clays.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in spring to mid summer up to 1/8 inch deep.

Maintenance: Mow no more than 2x a year outside of the summer growing season.

Landscape use: Mass plantings, meadows, prairie gardens, slopes, rock gardens, naturalized areas, winter interest.





Blue Grama

Bouteloua gracilis



H X W
0.5-1.5' X 1'



Profile: Blue grama is the state grass of Colorado and New Mexico. The grass supports 13 species of butterfly larvae and provides forage for wild turkey, sparrows, and wrens. It is native to most states in the United States and occurs in hot, dry habitats such as upland prairies, plains, and open rocky woodlands below 7,000 feet. The Apache, Hopi, and Navajo tribes used the plant medicinally and to make brooms and baskets. The Apache used the seeds as a food source.⁴¹

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Clay to rocky soil types with slow to fast drainage.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in late fall or spring to mid summer. Plant 1/32 to 1/16 inch deep and cover with a thin layer of mulch.

Maintenance: Allow old growth to remain for winter interest and to provide shelter for various types of wildlife during the colder months. Remove old vegetation in the spring. Maintain as a lawn with infrequent mowing (monthly to 2x a year).

Landscape use: Mass plantings, meadows, prairie gardens, slopes, rock gardens, naturalized areas, winter interest, as a lawn.





Clustered Field Sedge

Carex praegracilis



H X W
1-2' X 3.5'



Profile: Clustered field sedge is a great lawn substitute and can be useful in poorly draining or disturbed landscapes, like roadside areas. This species hosts pollinators such as the common ringlet (*Coenonympha tullia*), dun skipper (*Euphyes vestris*), and others. It grows throughout the Midwest and western United States from 2,700-9,800 feet in wet meadows, along streams and ditches, margins of lakes, ponds, seeps and springs, and sometimes in drier places among sagebrush-grass and dry meadow communities.

Water: Low to high. Summer irrigation up to 1-4x/month, once established.

Soil: Tolerant to a variety of soils with sufficient moisture, including saline and sodic soils.

Propagation: Pretreat seeds with a 30- to 60-day cold moist stratification period or plant outside in fall to early spring.

Maintenance: Little maintenance is required. Prune side stems for a more compact look or let grow unpruned. Can be mowed if grown as a groundcover.

Landscape use: Bioswales, rain gardens, slopes, lawn alternative, erosion control.



Great Basin Wildrye

Leymus cinereus



H X W
3-7' X 1-3'



Profile: Great Basin wildrye forms large, tall clumps and has a fibrous root system. Because of its height and density, it provides excellent cover for nesting upland birds, as well as winter forage. It is wide ranging throughout the western United States and grows in a diverse array of habitats, including grasslands and prairies, forests, scrub, chaparral, and sagebrush.

Water: Low. Summer irrigation maximum 2x/month, once established.

Soil: Clay and silty soils; coarse textured, gravelly, and stony soils.

Propagation: Scarify and cold moist stratify for 1-2 months. Or, plant seeds outside in the fall without pretreatment.

Maintenance: Little maintenance is required. It is not overly aggressive and does not easily spread. Some weed control will benefit establishment of seedlings. Allow old growth to remain for winter interest and to provide shelter for various types of wildlife during the colder months. Remove old vegetation in the spring.

Landscape use: Garden beds, prairie gardens, naturalized areas, winter interest, erosion control, good alternative to exotic ornamental grasses.



Bluebunch Wheatgrass

Pseudoroegneria spicata



H X W
1-2' X 1-2'



Profile: Bluebunch wheatgrass is a long-lived, cool-season grass with an extensive root system. It is the state grass of Montana, Oregon, and Washington. The species is palatable to all classes of livestock and wildlife, and provides a high amount of protein for grazing animals in the spring. It can be found in the northern Great Plains, northern Rocky Mountains, and Intermountain regions of the western United States. The most common habitats are open areas in sagebrush and juniper communities.

Water: Low. Summer irrigation maximum 1x/month, once established.

Soil: Medium to coarse-textured, well-drained soils.

Propagation: Pretreatment of seeds is not necessary. Plant outside in fall or spring between 1/8-1/4 inch deep.

Maintenance: Easily seeded but does not do well with strongly competitive non-native grass species. Allow old growth to remain for winter interest and to provide shelter for various types of wildlife during the colder months. Remove old vegetation in the spring.

Landscape use: Prairie gardens, naturalized areas, winter interest, erosion control, good alternative to exotic ornamental grasses.





Little Bluestem

Schizachyrium scoparium



H X W
2-4' X 2-3'



Profile: Little bluestem is an attractive landscape addition and provides habitat for birds and native pollinators. Its color varies throughout the seasons from shades of blue-green, red-orange, and copper. It occurs throughout most of the United States in a variety of habitats including prairies, hillsides, slopes, meadows, pastures, and limestone glades.

Water: Low. Summer irrigation maximum 1x/month, once established.

Soil: Adaptable, but prefers well-draining soil.

Propagation: Pretreatment of seeds is not necessary. Plant seeds outside in fall or spring.

Maintenance: Allow old growth to remain for winter interest and to provide shelter for wildlife during the colder months. Remove old vegetation in the spring.

Landscape use: Garden beds, prairie gardens, naturalized areas, rain gardens, xeriscapes, winter interest, erosion control, good alternative to exotic ornamental grasses.



Alkali Sacaton

Sporobolus airoides



H X W
3-4' X 2'



Profile: This drought-tolerant plant can be used as a ground cover and for soil restoration. It occurs throughout the western United States, Great Plains, Texas, Missouri, and Mexico. It grows in dry to moist sites in salt grass, salt desert shrub, sagebrush, and pinyon-juniper communities, along waterways and roadways at elevations 2,600–7,700 feet. The grass is a host plant for the sandhill skipper (*Polites sabuleti*) and white-lined sphinx (*Hyles lineata*). The grains were used as a food source for the Hopi during times of famine.⁴²

Water: Low to medium. Summer irrigation up to 1-3x/month, once established.

Soil: Tolerates a variety of soils.

Propagation: Pretreatment of seeds is not necessary. Germination can be improved with a 28-day cold moist stratification period. Plant outside in fall to early spring on the soil surface or up to 1/16 inch deep. May take up to 2 weeks to germinate.

Maintenance: Allow old growth to remain for winter interest and to provide shelter for wildlife during the colder months. Remove old vegetation in the spring.

Landscape use: Prairie gardens, naturalized areas, rock gardens, winter interest, rain gardens, xeriscapes, erosion control, good alternative to exotic ornamental grasses.





Saskatoon Serviceberry

Amelanchier alnifolia



H X W
4-15' X 6-8'



WOODY PLANTS

Profile: Saskatoon serviceberry is common to moist stream banks, dry hillsides, and open woods throughout much of the west and midwestern United States, Canada, and Alaska. It tends to sucker to form colonies. The purple berries provide food for a variety of mammals and birds. The fruit is often considered one of the best-tasting serviceberries. It can be eaten fresh, prepared in puddings, pies, and muffins, or dried. It is the larval host for the California hairstreak butterfly (*Satyrium californica*) and Ceanothus silkmoth (*Hyalophora euryalus*).

Water: Low to medium. Summer irrigation maximum up to 1-3x/month, once established.

Soil: A variety of well-draining soils.

Propagation: Cold moist stratification for 90- to 120-days. Can also be rooted from early spring hardwood cuttings or summer softwood cuttings.

Maintenance: Prune dead, diseased, or rubbing branches in late winter or early spring to promote heathy branching structure. Never remove more than 1/3 of the canopy at once.

Landscape use: Small accent tree or shrub, border plant, rain garden, pollinator gardens, edible gardens.





Utah Serviceberry

Amelanchier utahensis



H X W
3-15' X 8-10'



Profile: Utah serviceberry is relatively common to dry mesas and steep, rocky hillsides throughout the western United States. This multi-branched shrub is an important browse and food plant for a variety of mammals and birds. The edible berries may be eaten fresh, prepared in puddings, pies, and muffins, or dried. It is a larval host plant for numerous moth and butterfly species, including the western tent caterpillar (*Malacosoma californica*), two-tailed swallowtail (*Papilio multicaudata*), Weidemeyer's admiral (*Limenitis weidemeyerii*), and viceroy (*Limenitis archippus*).

Water: Very low to low. Summer irrigation 1x/month or less, once established.

Soil: Tolerant of a variety of soils, including well-drained, rocky soils, sand, clay, and loam.

Propagation: Treat seeds with a 45-day cold moist stratification period. Plants can also be rooted from early spring hardwood cuttings or summer softwood cuttings.

Maintenance: Prune dead, diseased, or rubbing branches in late winter or early spring to promote healthy branching structure. Never remove more than 1/3 of the canopy at once.

Landscape use: Hedge, small accent tree or shrub, border plant, pollinator gardens, edible gardens.





Alderleaf Mountain Mahogany

Cercocarpus montanus



H X W
3-10' X 4-6'



WOODY PLANTS

Profile: Alderleaf mountain mahogany is a shrub or small tree with upright or spreading branches, semi-evergreen leaves, and inconspicuous flowers that are followed by feathery, silvery-white fruits. It occurs on rocky hillsides, mesas, canyons, cliffs, and open woodlands throughout the west and midwestern United States. This heat and drought-tolerant, nitrogen-fixing plant provides forage and cover for a variety of animals. It is a larval host for the mountain mahogany hairstreak (*Satyrium tetra*). This plant is attractive to browsing deer. Southwestern tribes used this plant medicinally and the wood for crafting and building.⁴³

Water: Very low. Irrigation is not required, once established.

Soil: Most abundant on sunny sites with coarse, shallow, well-drained soils.

Propagation: Treat seeds with a 30-day cold moist stratification. Some sources recommend scarification.

Maintenance: Prune dead, diseased, or rubbing branches in late winter or early spring to promote healthy branching structure. Never remove more than 1/3 of the canopy at once.

Landscape use: Hedge, accent shrub or small tree, border plant.



Desert Fernbush

Chamaebatiaria millefolium



H X W
4-6' X 4-6'



Profile: Desert fernbush is fragrant and drought-tolerant and has fern-like leaves. It can be found on dry, rocky mountain slopes throughout the west. It is a larval host for Nuttall's sheep moth (*Hemileuca nuttalli*) and the white-lined sphinx (*Hyles lineata*). The Goshute, Navajo, Paiute, and Shoshone tribes used this plant medicinally.⁴⁴

Water: Very low. Irrigation is not required, once established.

Soil: Sandy or loamy soils.

Propagation: Pretreatment of seeds is not necessary. A cold moist stratification period of 3-4 weeks will improve germination. Or, sow on soil surface in the fall. Do not overwater seedlings. The plant can also be grown from cuttings.

Maintenance: Prune dead, diseased, or rubbing branches in late winter or early spring to promote healthy branching structure. Never remove more than 1/3 of the canopy at once. Shear off flowers once blooms are spent.

Landscape use: Hedge, border plant, xeriscapes.





Apache Plume

Fallugia paradoxa



H X W
3-5' X 4-6'



Profile: Apache plume is native to the southwestern United States and northern Mexico and grows in arid habitats, such as desert woodlands and scrub. It produces white to light pink rose-like flowers. Once the petals fall, clusters of dark pink plume-like styles remain. It is a larval host plant for Neumoegen's buckmoth (*Hemileuca neumoegeni*) and the white-lined sphinx moth (*Hyles lineata*). The Navajo used this plant for ceremonial medicine.⁴⁵

Water: Very low. Irrigation is not required, once established.

Soil: Coarse, sandy.

Propagation: Pretreatment of seeds is not needed, but a 90-day cold stratification period may improve germination. Cover seeds lightly with perlite or sand. The seeds may take 10-20 days to germinate. Do not overwater seedlings.

Maintenance: Prune 1/3 of the oldest branches as well as dead, diseased, or rubbing branches in late winter or early spring to open up circulation and promote healthy branching structure.

Landscape use: Hedge, accent shrub, border plant, pollinator gardens, xeriscapes, erosion control.





Littleleaf Mockorange

Philadelphus microphyllus



H X W
4-5' X 3'



Profile: This fragrant, drought-tolerant shrub is native to northern Mexico, the southwestern quadrant of the United States, and as far north as Wyoming. It grows in woodlands, scrub, canyons, open hillsides, and chaparral up to 10,000 feet. It is a highly variable plant with many subspecies. It is a host plant for the white-lined sphinx moth (*Hyles lineata*).

Water: Low. Summer irrigation up to 1-2x/month, once established.

Soil: A variety of well-drained soils.

Propagation: Cold moist stratify seeds for 30- to 90-days or plant outside in the fall or early spring. Plants can be propagated by cuttings in July-August.

Maintenance: Prune dead, diseased, and rubbing branches in late winter or early spring to promote healthy branching structure. Never remove more than 1/3 of the canopy at one time.

Landscape use: Hedge, accent shrub, border plant, pollinator gardens.





Antelope Bitterbrush

Purshia tridentata



WOODY PLANTS

Profile: Antelope bitterbrush is commonly found on dry sagebrush and pinyon-juniper slopes in the western United States and British Columbia. It produces cheerful yellow to pale yellow flowers and typically grows 4-5 feet tall but can reach 12 feet. The plant is larval host for many butterfly and moth species, including California hairstreak (*Satyrium californica*), Behr's hairstreak (*Satyrium behrii*), Ceanothus silkworm (*Hyalophora euryalus*), and Nuttall's sheep moth (*Hemileuca nuttalli*). This plant is attractive to browsing deer. The Navajo, Paiute, and Shoshone tribes had various medicinal uses for the plant. The Navajo used the pulp from the plant to make arrows and the bark for crafting diapers and bedding in cradleboards.⁴⁶

Water: Very low. Irrigation is not required, once established.

Soil: Tolerant of many soil types, including rocky, gravelly, fast draining soils.

Propagation: Cold moist stratify seeds for 6 weeks or plant seeds outside in late fall. The tips of branches may be rooted in soil to propagate new plants.

Maintenance: Prune dead, diseased, or rubbing branches in late winter or early spring to promote heathy branching structure. Never remove more than 1/3 of the canopy at once.

Landscape use: Accent shrub, hedge, border plant, butterfly gardens, xeriscapes, informal plantings, erosion control.





Golden Currant

Ribes aureum



H X W
4-6' X 4-6'



Profile: Golden currant is a fragrant, yellow-flowered bush that produces edible fruit and provides red fall foliage. The flowers attract hummingbirds and monarch butterflies. The fruit attracts a variety of birds. This plant grows in slope bottoms, along creeks, sagebrush scrub, woodlands, and in fir and pine forests. It prefers part shade but can tolerate full sun if watered more frequently. It is the host plant for a variety of moth and butterfly larvae. Many indigenous peoples used this plant as a food source, including the Paiute, Shoshone, and Ute tribes.⁴⁷

Water: Medium. Summer irrigation maximum 3x/month, once established.

Soil: Tolerates a variety of soils.

Propagation: Seeding; cuttings, layering, or division of plants.

Maintenance: Low maintenance. Occasionally prune dead, diseased, and rubbing branches in late winter or early spring to promote healthy branching structure. Remove unwanted suckers to contain spread.

Landscape use: Hedge, accent shrub, border plant, wildlife gardens, edible gardens, fall color, deer resistant.



WOODY PLANTS



Desert Sage

Salvia dorii



H X W
1-3' X 1-3'



WOODY PLANTS

Profile: Desert sage grows primarily in the Great Basin Range and southward to the Mojave Desert. This fragrant plant has showy, spike-like, purple flower clusters. It is the larval host plant for the white-lined sphinx moth (*Hyles lineata*), alfalfa looper moth (*Autographa californica*), bilobed looper moth (*Megalographa biloba*), and wavy-lined emerald moth (*Synchlora aerata*).

Water: Very low. Irrigation is not required, once established.

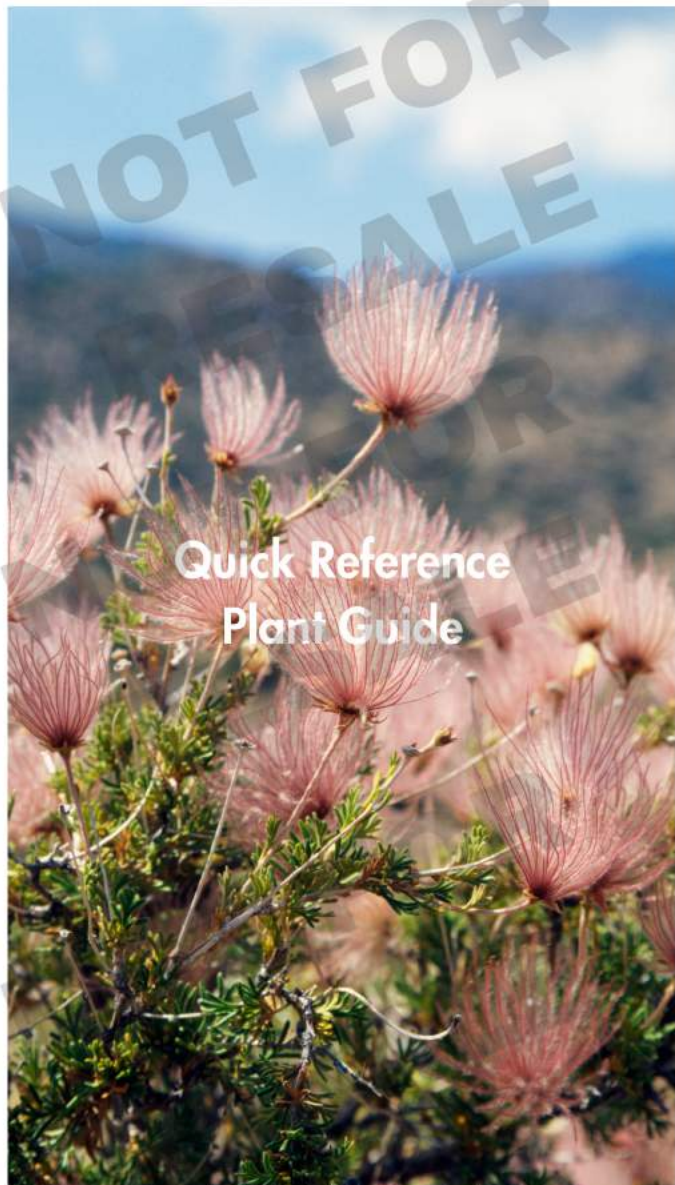
Soil: Prefers sandy or decomposed granite soil.

Propagation: Propagate by dividing plants in early spring or from cuttings of new growth at anytime of year.

Maintenance: Prune lightly after flowering.

Landscape use: Hedge, accent shrub, border plant, pollinator gardens, xeriscapes, bank stabilization, wildlife gardens, deer resistant.





Quick Reference
Plant Guide

Apache Plume (*Fallugia paradoxa*)

Common Name	Scientific Name	Habitat				Sun		Zone
		Desert	Foothill	Mountain	Wetland	Full	Part	
Annual Wildflowers								
Desert Marigold	<i>Baileya multiradiata</i>							7-10
Yellow Beeplant	<i>Cleome lutea</i>							3-8
Rocky Mountain Beeplant	<i>Cleome serrulata</i>							3-8
Annual Sunflower	<i>Helianthus annuus</i>							2-11
Perennial Wildflowers								
Yerba Mansa	<i>Anemopsis californica</i>							7-10
Swamp Milkweed	<i>Asclepias incarnata</i>							3-8
Showy Milkweed	<i>Asclepias speciosa</i>							3-9
Horsetail Milkweed	<i>Asclepias subverticillata</i>							4-7
Aspen Fleabane	<i>Erigeron speciosus</i>							2-9
Hummingbird Trumpet	<i>Epilobium canum var. garrettii</i>							6-10
Sulphur-Flower Buckwheat	<i>Eriogonum umbellatum</i>							4-9
Spotted Joe-Pye Weed	<i>Eupatorium maculatum</i>							4-8
Blanket Flower	<i>Gaillardia aristata</i>							3-8
Utah Sweetvetch	<i>Hedysorum boreale</i>							3-8
Sneezeweed	<i>Helenium autumnale</i>							3-9
Oneflower Sunflower	<i>Helianthella uniflora</i>							4-7
Nuttall's Sunflower	<i>Helianthus nuttallii</i>							5-9
Showy Goldeneye	<i>Heliomeris multiflora</i>							4-8
Salt Heliotrope	<i>Heliotropium curassavica</i>							9-10
Lewis Flax	<i>Linum lewisii</i>							2-7
Rough Bugleweed	<i>Lycopus asper</i>							4-8

Size H X W	Water	Soil					Bloom	Color	Page
		Clay	Silty	Loamy	Sandy	Rocky			
1-2' X 1-2'					X	X	Apr-Jul	Yellow	26
1-5' X 1'				X	X		May-Jul	Yellow	27
2-6' X 1-3'				X	X		Jul-Sep	Purple	28
2-10' X 2-4'				X	X		Jul-Sep	Yellow	29
0.5' X 2'		X	X	X	X	X	Feb-Mar	White	30
3-5' X 2-3'		X	X	X	X		Jul-Aug	Pink, white	31
1-5' X 1-3'		X	X	X	X		Jun-Aug	White, pink	32
1-2' X 1-1.5'				X	X	X	Jun-Sep	White, greenish-white	33
1-2' X 1-2'				X	X		Aug-Oct	Purple, pink, white	34
1.5' X 1-2'		X	X	X	X	X	Jul-Oct	Red	35
1' X 1-5'				X	X	X	Jun-Aug	Yellow, white	36
4-6' X 3-4'			X	X	X		Jul-Sep	Pink, purple	37
2-3' X 1-2'		X	X	X	X		Jun-Sep	Red, orange, yellow	38
1-2' X 1.5'				X	X	X	May-Aug	Magenta, pink	39
3-5' X 3'			X	X			Jul-Oct	Yellow	40
2-3' X 1-2'					X	X	May-Aug	Yellow	41
3-8' X 1-2'		X	X	X			Jul-Oct	Yellow	42
1-2' X 1'				X	X		Jul-Sep	Yellow	43
1-2' X 2'				X	X		Mar-Oct	White, purple, yellow	44
1-3' X 1-3'				X	X		May-Jul	Blue, violet	45
2.5' X 1-3'		X	X	X	X		Jul-Aug	White	46

Common Name	Scientific Name	Habitat				Sun		Zone
		Desert	Foothill	Mountain	Wetland	Full	Part	
Perennial Wildflowers								
Desert Four O'Clock	<i>Mirabilis multiflora</i>							4-8
Hooker's Evening Primrose	<i>Oenothera elata</i>							5-9
Dusty Beardtongue	<i>Penstemon canarrhenus</i>							5-6
Firecracker Penstemon	<i>Penstemon eatonii</i>							4-8
Thickleaf Penstemon	<i>Penstemon pachyphyllus</i>							4-7
Palmer's Penstemon	<i>Penstemon palmeri</i>							4-8
Rocky Mountain Penstemon	<i>Penstemon strictus</i>							4-8
Saltmarsh Fleabane	<i>Pluchea odorata</i>							8-11
Prairie Coneflower	<i>Ratibida columnifera</i>							4-8
Water Groundsel	<i>Senecio hydrophilus</i>							6-9
Western Sea Purslane	<i>Securium verrucosum</i>							6-11
Canada Goldenrod	<i>Solidago canadensis</i>							3-9
Desert Globemallow	<i>Sphaeralcea ambigua</i>							5-8
Gooseberryleaf Globemallow	<i>Sphaeralcea grassulariifolia</i>							3-8
Munro's Globemallow	<i>Sphaeralcea munroana</i>							4-8
White Heath Aster	<i>Symphotrichum ericoides</i>							3-10
Perky Sue	<i>Tetaneuris aculis</i>							3-8
American Germander	<i>Teucrium canadense</i>							4-9
Blue Vervain	<i>Verbena hastata</i>							3-8

Size	Water	Soil					Bloom	Color	Page
		Clay	Silty	Loamy	Sandy	Rocky			
H X W									
1-2' X 3-6'					X	X	Jun-Sep	Magenta	47
2-5' X 2-3'		X	X	X	X		Jun-Sep	Yellow	48
1-4' X 1-3'				X	X	X	May-Jul	Violet, blue	49
2-3' X 3'					X		May-Jun	Red	50
1-2' X 8-12"				X	X	X	May-Aug	Blue, violet	51
3-5' X 2'				X	X	X	May-Jul	Pink	52
2-3' X 3'				X	X	X	May-Jul	Violet	53
2-4' X 2-3'		X	X	X			Jun-Oct	Pink	54
1-3' X 1.5'					X	X	May-Oct	Red, orange, yellow	55
3-7' x 1-2'		X	X	X			May-Sep	Yellow	56
1-2' X 2-6'		X	X	X	X	X	Mar-Oct	Magenta	57
2-6' X 2-3'		X	X	X	X	X	Jul-Oct	Yellow	58
3' X 2-4'				X	X	X	Feb-Nov	Orange	59
2-3' X 1-2'		X	X	X	X	X	Apr-Aug	Orange	60
8-32" X 1-2"				X	X	X	May-Jul	Orange	61
2-3' X 1-2'					X	X	Jul-Oct	White	62
8-12" X 12-18"		X	X	X	X	X	Mar-Oct	Yellow	63
1-3' X 1.5-3'		X	X	X	X		Jun-Jul	White, purple	64
2-5' X 1-2'		X	X	X	X		Jul-Sep	Violet, blue	65

Common Name	Scientific Name	Habitat				Sun		Zone
		Desert	Foothill	Mountain	Wetland	Full	Part	
Grasses and Grass-Likes								
Indian Ricegrass	<i>Achnatherum hymenoides</i>							3-9
Sideoats Grama	<i>Bouteloua curtipendula</i>							4-9
Blue Grama	<i>Bouteloua gracilis</i>							3-8
Clustered Field Sedge	<i>Carex praegracilis</i>							3-9
Great Basin Wildrye	<i>Leymus cinereus</i>							4-9
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>							4-8
Little Bluestem	<i>Schizachyrium scoparium</i>							4-10
Alkali Sacaton	<i>Sporobolus airoides</i>							4-9
Woody Plants								
Saskatoon Serviceberry	<i>Amelanchier alnifolia</i>							2-9
Utah Serviceberry	<i>Amelanchier utahensis</i>							5-8
Alderleaf Mountain Mahogany	<i>Cercocarpus montanus</i>							3-7
Desert Fernbush	<i>Chamaebatiaria millefolium</i>							4-8
Apache Plume	<i>Fallugia paradoxa</i>							4-10
Littleleaf Mockorange	<i>Philadelphus microphyllus</i>							5-9
Antelope Bitterbrush	<i>Purshia tridentata</i>							3-9
Golden Currant	<i>Ribes aureum</i>							2-7
Desert Sage	<i>Salvia dorii</i>							5-9

Size H X W	Water		Soil					Bloom	Color	Page
			Clay	Silty	Loamy	Sandy	Rocky			
Grasses and Grass-Likes										
1-3' X 1-2'						X		May-Jun	White/tan seed heads	66
2-3' X 1-2'			X	X	X	X		Jun-Nov	Pink/orange inflorescence. Tan seed heads	67
0.5-1.5' X 1'			X	X	X	X	X	Jul-Aug	Brown/burgundy inflorescence. Brown/tan in fall	68
1-2' X 3.5'			X	X	X	X	X	May-Aug	Brown/tan seed heads	69
3-7' X 1-3'			X	X	X	X	X	Jun-Aug	Green/tan in fall	70
1-2' X 1-2'						X	X	Jun-Jul	Green/tan	71
2-4' X 2-3'					X	X	X	Aug-Sep	Blue-green early in the season. Tan to russet in autumn	72
3-4' X 2'			X	X	X	X	X	Jul-Nov	Tan inflorescence	73
Woody Plants										
4-15' X 6-8'			X	X	X	X	X	Apr-Jun	White	74
3-15' X 8-10'			X	X	X	X	X	Apr-Jun	White	75
3-10' X 4-6'						X	X	Apr-Jun	Inconspicuous yellow flowers followed by white seedheads	76
4-6' X 4-6'					X	X		Aug-Sep	White, cream	77
3-5' X 4-6'						X	X	Jun-Jul	White flowers followed by pink plumes	78
4-5' X 3'					X	X	X	May-Jun	White	79
3-4' X 8'					X	X	X	Apr-Jul	Yellow, white	80
4-6' X 4-6'			X	X	X	X	X	Mar-Apr	Yellow	81
1-3' X 1-3'						X		May-Jul	Blue, purple	82



Fruiting Saskatoon Serviceberry (*Amelanchier alnifolia*)



Flowering Golden Currant (*Ribes aureum*)



Rocky Mountain Penstemon (*Penstemon strictus*) in Bloom

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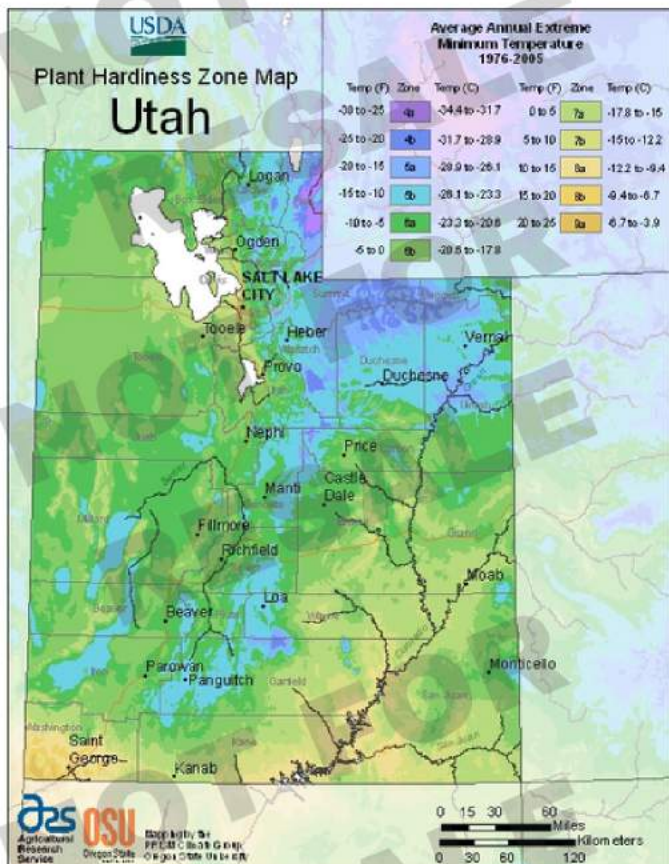
Canada Goldenrod (*Solidago canadensis*) in Winter



Blue Vervain (*Verbena hastata*) in Winter



Milkweed (*Asclepias* sp.) Seed Pods



NOT FOR SALE



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