

TECHNICAL NOTE

USDA – Natural Resources Conservation Service
Boise, Idaho – Salt Lake City, Utah - Lakewood/Denver, Colorado

Plant Materials Technical Note No. 2C

July 2013

Plant Materials for Pollinators and Other Beneficial Insects in Eastern Utah and Western Colorado

Derek Tilley, Agronomist, NRCS Plant Materials Center, Aberdeen, Idaho
Christine Taliga, Plant Materials Specialist, NRCS, Lakewood, Colorado
Casey Burns, State Biologist, NRCS, Salt Lake City, Utah
Loren St. John, Team Leader, NRCS Plant Materials Center, Aberdeen, Idaho



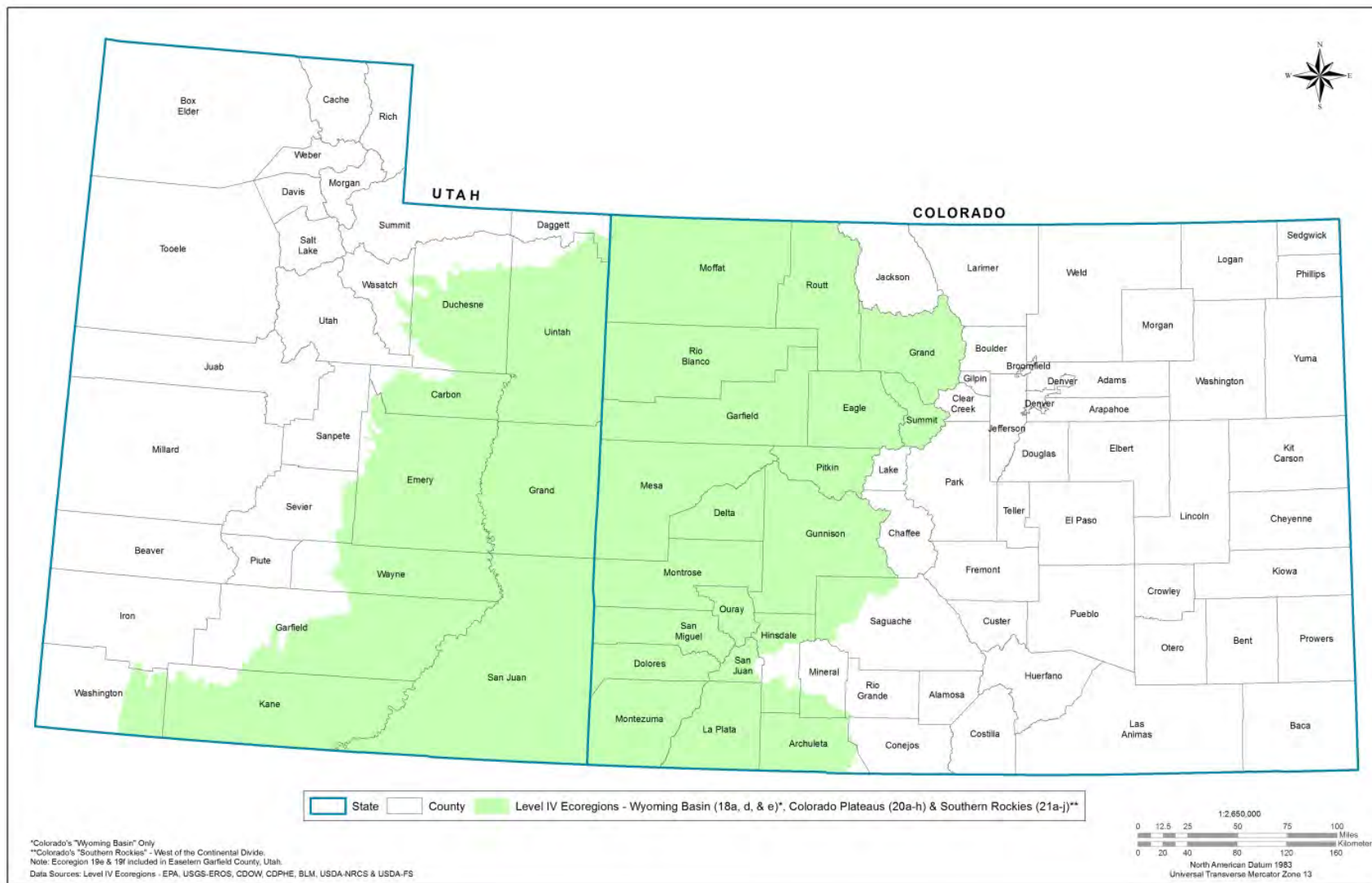
The purpose of this Technical Note is to provide guidance for the design and implementation of conservation plantings to enhance habitat for pollinators and beneficial insects including: bees, wasps, butterflies, moths and hummingbirds. Plant species included in this document are adapted to the Colorado Plateau of eastern Utah and western Colorado to the Continental Divide.

Plants for Pollinators in the Intermountain West

TABLE OF CONTENTS

MAP OF COVERED AREA.....	4
INTRODUCTION.....	5
ECOLOGICAL BENEFITS OF POLLINATOR PLANTINGS.....	5
TYPES OF POLLINATOR PLANTINGS.....	5
HABITAT CONSIDERATIONS.....	6
TABLE 1: HABITAT REQUIREMENTS FOR GENERAL NATIVE POLLINATORS.....	7
ESTABLISHING POLLINATOR PLANTINGS: GENERAL CONSIDERATIONS.....	7
PLANT SELECTION AND ESTABLISHMENT GUIDELINES	8
EXAMPLE OF POLLINATOR PLANTING SEED MIXTURE.....	9
RECOMMENDED ESTABLISHMENT GUIDELINES.....	10
SPECIES DESCRIPTIONS.....	12
FORBS AND LEGUMES.....	12
TREES, SHRUBS, AND HALF-SHRUBS.....	33
POLLINATOR PLANT LISTS	43
TABLE 2: FORB AND LEGUME SPECIES CHARACTERISTICS	44
TABLE 3: FORB AND LEGUME SEEDING INFORMATION	48
TABLE 4: GRASSES.....	51
TABLE 5: TREES, SHRUBS, AND HALF-SHRUBS”.....	52
REFERENCES.....	54

Plants for Pollinators in the Intermountain West



Area covered by this Technical Note encompassing EPA Ecoregions 20 (Colorado Plateau) and 21 (Southern Rockies) delimited to the east by the continental divide. Contributed by Christine Taliga, Colorado Plant Materials Program.

INTRODUCTION

Many of the world's crop species benefit from insect pollination, which is mostly provided by bees. In North America, bees pollinate billions of dollars' worth of crops annually. Nearly one quarter of our diet comes from crops whose production benefits from pollinating bees.

Pollinators include bees, moths, flies, beetles, wasps, desert bats, hummingbirds, and butterflies.

Collectively, pollinators are critical to the function of terrestrial ecosystems because they enhance plant reproduction. Despite their importance, pollinators are threatened world-wide by habitat loss, habitat fragmentation, improper pesticide use, disease and parasites. This has serious economic implications for humans and for maintaining ecosystem diversity and stability.

The Natural Resources Conservation Service can assist landowners with habitat enhancement for pollinators by encouraging the establishment of an array of attractive plants that flower throughout the growing season. Plant species, both herbaceous and woody, that provide a source of nectar, pollen and cover for adult and immature pollinators, will also provide habitat for a large array of other wildlife species.



Green sweatbee on hoary tansyaster. Derek Tilley, NRCS Aberdeen.

This technical note covers eastern Utah comprised of the Colorado Plateau Ecoregion, and the West Slope region of Colorado to the Continental Divide. These boundaries are not intended to illustrate the precise area of adaptation for the listed species, but a generalized boundary in which the species should be applicable. The species listed herein should be used in areas to which they are adapted according to the precipitation and soil requirements of the species. For additional species adapted to the Intermountain Western Region, refer to Idaho Plant Materials Technical Note 2A. Species adapted to the southern deserts can be found in Arizona Plant Materials Technical Note 12-1, New Mexico Plant Materials Technical Note 71, and Colorado Plant Materials Technical Note 59.

This is not meant to be an inclusive list of all species that can be used for pollinator plantings. Revisions and updates to this guide will be made as new species and varieties become available on the market, and as more knowledge is developed to better establish and manage pollinator plantings.

ECOLOGICAL BENEFITS OF POLLINATOR PLANTINGS

Pollinator-friendly plantings have the potential to provide multiple ecological benefits. They can:

Reduce pesticide use. Sequentially flowering plants provide forage and cover for predatory and parasitic insects that help control pest species. Established plant communities will also resist weed invasion.

Stabilize soil and provide ground cover. Root systems and above ground vegetation hold soil in place, improve soil moisture infiltration and water holding capacity, reduce the risk of erosion and serve as buffers which protect against surface water pollution. Legumes also contribute nitrogen to the soil.

Serve as hedgerows, windbreaks and shelterbelts. Shrubs and trees protect farmsteads, feeding areas, crops and livestock from wind, snow and dust damage. They also provide food, nesting and cover habitat for a great variety of wildlife, pollinators and other beneficial insects.

TYPES OF POLLINATOR PLANTINGS

The easiest and most effective way to provide habitat for pollinators and beneficial insects is through maintaining or restoring natural areas. These are the

largest and best areas for pollinators and one can see the largest benefits if these areas are managed properly. Grazing management with pollinator habitat in mind will have huge landscape-level effects.

In addition to restoration and management of natural areas, many options are available to landowners to provide a pollinator friendly environment. These range from areas designed specifically for pollinator habitat to using pollinator friendly species as part of a farming rotation.



A predatory stink bug (*Podisus maculiventris* [Say], Pentatomidae) feeding on an eastern tent caterpillar (*Malacosoma americanum* [F.], Lasiocampidae). Ted Evans, Utah State University. Used with permission.

Insectary plantings are plantings that may be placed as a block inside of a crop, along the borders or placed just outside of a crop to attract beneficial insects to the crop for biological control (i.e. predators or parasitoids) of crop pests. Beneficial insects can be as much as ten times more abundant in insectary plantings compared to nearby locations. Some of these plants can also provide good pollen or

nectar sources for bees. These may be annual plantings or more permanent plantings along the outer rows within the field or outside but adjacent to the crop field. The principles of enhancement for pollinators also generally apply to insectary plantings - such as including a diversity of flowers that bloom through the entire growing season to provide a steady supply of nectar and pollen.

Insectary plantings often include species with very small flowers. Predatory and parasitoid beneficial insects are often small with small mouth-parts. Plants with simple, cup-shaped and open flowers (that the insects can easily access) are preferred.

Cover crops, seasonally established crops for vegetative cover and soil conservation, can reduce soil erosion and weed competition, and improve soil organic material and soil tilth. They may be part of a crop rotation that is a harvested crop or they may be inter-planted between crop rows (e.g. vineyards) to enhance soil organic matter and nutrients. Broadleaf cover crops (i.e. forbs and legumes) can also provide good pollen or nectar sources for bees and other beneficial insects.

HABITAT CONSIDERATIONS

Habitat needs for pollinators are similar to other animal species: food, shelter, nesting sites and water. Shelter and nesting sites may be a limiting factor in your project area and should be considered during planning.

Nectar and pollen from flowering plants provide food and water for pollinators. Additional needs for water, if necessary, can be met in riparian areas and wetlands, birdbaths, fountains, irrigation water, and moisture from plants. Moist salt licks help provide mineral requirements for butterflies and sweat bees. Shelter and nesting habitat needs differ by pollinator species and include bare or partially vegetated, well-drained soil; soil banks and cliffs, dead standing or fallen trees with beetle emergence holes, bee nest blocks, live trees, clumps of grass, live brush, piles of leaves and sticks, wood piles, tree bark and rock crevices.

Most native bees are solitary, nesting underground, or less commonly, above ground using beetle holes in dead-wood or dead pithy stems (e.g. elderberry, sumac or rose). Bumblebees are social with colonies of dozens to hundreds of workers. They typically nest in tree hollows or below ground in old rodent burrows or in grass hummocks.

Plants for Pollinators in the Intermountain West

In pollinator plantings, use of pesticides should be avoided, especially insecticides. (Some applications, such as carbaryl bran baits for grasshoppers, are safe for bees.) If pesticides must be used, leave some areas untreated as refuge habitat for predatory and

parasitic insects and pollinators that can re-colonize treated areas. Harm to beneficial insects can also be limited by spraying at dusk when pollinators are nesting and not actively foraging.

TABLE 1: HABITAT REQUIREMENTS FOR NATIVE POLLINATORS

Pollinator Group	Food	Nest
Solitary bees	Nectar and pollen	Nest in bare and partially vegetated soils where water won't pond; or in beetle holes in deadwood, within pithy stems or twigs, or construct surface nests of mud or leaf pulp
Bumblebees	Nectar and pollen	Nest cavities underground, often in old rodent burrows, or in hollow trees or within clumps of grass
Butterflies and moths	Nectar, nutrients, minerals and salts from rotting fruit, tree sap, clay deposits and mud puddles	Leaves and stems of larval host plants; also small woodpiles used by species that winter as adults
Hummingbirds	Nectar, insects, caterpillars, tree sap and willow catkins	Trees, shrubs and vines

ESTABLISHING POLLINATOR PLANTINGS: GENERAL CONSIDERATIONS

- **Select an area that is at least 0.5 acres in size.** This will ensure adequate floral resources are available for pollinators. Bigger is obviously better; however small scale plantings (backyards, community gardens) can also be very beneficial.
- **Start right.** Most grasses and forbs, including legumes, can be started by direct seeding or in some cases by transplanting nursery seedlings. Flowering shrubs and trees are often best established by transplanting nursery seedlings.
- **Determine soil drainage and other soil limitation factors.** Most species will not do well in heavy, poorly drained or saline to sodic soils; select species that can perform well in the soils of the site. You may need to conduct a soil test to assess salinity and other existing site conditions that may affect plant establishment.
- **Match plants with similar site preferences.** Choose plants that have similar soil and water requirements and that are adapted to the local climate (reference ecological site descriptions, local plant inventories, etc.)
- **Choose the right plant species.** Plantings should include a mixture of species that provide continual blooms throughout the growing season. A well planned seed mix of plant species that bloom throughout the growing season will result in a continuous source of nectar, pollen, and nesting sites needed by pollinators and other beneficial insects. Depending on the precipitation zone, at least one to three species are recommended for each bloom period: early (April-May), mid (June-July) and late (August-September). One or two grass species may also be included in the mix if ground cover is needed and to provide nesting habitat for ground nesting bees. Grasses should not comprise more than 25% of the mixture. To select plant species for your precipitation zone, use the Approved Pollinator Plant Lists (Tables 2-5).
- **Water wisely.** Shrub and tree plantings in the drier portions of the Intermountain West may require irrigation. For the best establishment biweekly watering the first 2 to 3 years is recommended. Once the plants are well established, watering less frequently, and for a longer duration will drive the moisture deeper into the soil to ensure the plants develop their roots more fully, enhancing long-term survival.
- **Control weeds.** Most plants do not compete well with weeds during establishment. Before establishment, select a weed free area or create one using appropriate herbicides or tillage. Keep the area relatively weed

free for the first 2 to 3 years of establishment. Mowing weeds during plant establishment will help suppress weed competition and encourage desired plants. However, some annual and biennial weeds are good nectar sources for pollinators and will die out naturally as the planting becomes established.

- **Protect planting from wildlife and livestock.** Fencing to protect the planting may be required in areas with abundant deer, antelope or elk, or with livestock such as sheep, cattle or horses. Monitor and control rodents and rabbits. This will ensure flowers are available to provide nectar, pollen and succulent foliage for pollinators. After plants are established, sustainable levels of wildlife use may be an additional benefit of the planting.
- **Maintain plantings.** Treatments such as haying or mowing may be required outside of the primary flowering period(s) to remove excess residue or weeds. Leaf litter and downed branches should be left in place for soil erosion, weed control, soil organic matter, and wildlife habitat and forage. Spot-spray herbicide treatments may also be needed to control invasive or noxious weeds.

PLANT SELECTION AND ESTABLISHMENT GUIDELINES FOR POLLINATOR HABITAT PLANTINGS

PLANT SELECTION

- Select plants from the Approved Plant List (found in appendix tables 2-5) that are adapted to your precipitation range.
- For restoration projects on range and other non-cropped lands such as riparian areas, select native species.
- A mixture of 5 to 9 species including those that bloom in spring, summer and late summer (fall) are recommended (follow NRCS guidelines for CRP).

- Select plants that will attract the target pollinator type(s). There may be concern that pollinator plants can lure pollinators away from crop areas. The opposite however has been shown to be true. Farms adjacent to natural areas have a greater diversity and number of native bees resulting in increased pollination.



Honey Bee on Rocky Mountain bee plant. Photo by Colorado Plant Materials Program.

















- Species with an asterisk (*) are known to establish easily and are commercially available in large quantities. It is strongly recommended several of these species be included in all mixes. The remaining species for each mix will depend on seed availability and the price the landowner is willing to pay.
- Annual flowering plants can be useful tools in pollinator plantings because they produce tremendous amounts of flowers. However, many annual plants only last one growing season and can be very competitive with perennial species that are slower to establish. Some annual plants may also be considered “weedy”. Consequently, annuals should only be used for site specific purposes such as for small, odd areas where they are not mixed with perennials or as pollinator friendly cover crops.

Plants for Pollinators in the Intermountain West

- Non-native annual plants that readily attract pollinators include buckwheat, canola, safflower, berseem clover, camelina, lentils and dry peas. Some annual forbs may be used as temporary cover crops prior to planting perennials to suppress weed growth and reduce the weed seed bank in the soil.
- Native annuals and biennials such as Rocky Mountain beeplant, annual flax, annual sunflower, native annual buckwheat, golden crownbeard, and greenthread may be helpful in perennial stand establishment by acting as soil primers for mycorrhizae. These plants can act as soil stabilizers, and may also be more tolerant to higher levels of soil nitrogen (which is sometimes the case in former cropland). These traits can aid in establishment of post-disturbance plant communities, such as after wildfire (fireweed). These species tend to reseed themselves in a site appropriate seed mix decreasing in density over time as the perennial plants become established.
- Many pollinator species available have not been thoroughly tested, and their performance in conservation plantings is unknown. Released cultivars and pre-varietal germplasm releases have been tested and evaluated for performance prior to their official release. Source Identified and wildland collected materials may not have a history of evaluation and likelihood of establishment is less certain. The use of certified seed from varieties released by NRCS, ARS and other plant materials programs is recommended.
- Some species listed may be toxic to livestock and are not appropriate for planting in rangeland or pasture grazing situations.
- For NRCS plantings, species not included on these lists may be substituted only if approved by the State Plant Materials Specialist.

EXAMPLE OF POLLINATOR PLANTING SEED MIXTURE

The table below showcases a possible seed mix appropriate to eastern Utah and western Colorado, within a 12-14" precipitation zone. This seed mix might be applicable for example in the lower Dolores River Drainages in western Colorado, in a site that was historically a basin big sagebrush, Indian ricegrass, blue grama plant community with sandy loam soils. (PLS=Pure Live Seed).

Species	Variety	Color/Bloom Time			Full Seeding Rate Lbs/ac	Desired % of Mix	PLS lbs./ac	Ac to be seeded	Total PLS
		Early	Mid.	Late					
Rocky Mtn. penstemon	Bandera				4	10	0.4	10	4.0
Lewis flax	Maple Grove				4	15	0.6	10	6.0
Western Yarrow	Eagle				0.5	5	0.025	10	0.25
Rocky Mountain beeplant	Common				17	5	0.85	10	8.5
Sulfurflower buckwheat	Common				4	10	0.4	10	4.0
Utah sweetvetch	Timp				24	10	2.4	10	24.0
Annual Sunflower	Common				24	2	0.5	10	5.0
White prairieclover	Common				2	10	0.2	10	2.0
Hoary tansyaster	Common				2	8	0.16	10	1.6
Blue grama	Hachita		N/A		3	10	0.3	10	3.0
Indian ricegrass	White River		N/A		8	15	1.2	10	12.0
Totals					73.1	100	7.04		70.4

RECOMMENDED ESTABLISHMENT GUIDELINES

SITE PREPARATION

- Some herbicides can have residual carryover and can negatively affect seedling establishment. Know the cropping history and past herbicide use of the site to be planted.
- Eliminate existing vegetation prior to seeding with tillage, herbicide, or a combination of techniques.
- Fallow the area to be seeded for at least one growing season. Delay seeding until after a flush of fall germinating weeds. Weed seedlings need to be controlled prior to seeding.
- Create a firm, weed-free seed bed. Rule of thumb: a person's footprint will not sink deeper than ½ inch into the seedbed.

SEEDING

- Seed forbs and grasses at the same time during a late fall dormant planting (November or December).
- One of two seeding methods is recommended:
 - Drill seed into a firm, weed-free seedbed. The best drill seedings have been accomplished by setting the drill to place the seed no deeper than ¼ inch. Drag chains or press wheels help to cover the seed with a thin soil layer.
 - Broadcast seed into a weed-free seedbed. The best broadcast seedings have been accomplished by pulling the tubes on the drill and running the packer wheels with enough downward pressure to create good furrows and improve seed to soil contact. Often, a harrow is pulled behind the drill to lightly cover the broadcasted seed.
- Rice hulls, cracked grain or granular clay may be used to assist seed flow.
- Omit grasses from the planting mix in areas heavily infested with cheatgrass or medusahead to allow for the option of using selective grass herbicides. This should only be done if the ground is not highly erodible.

SHRUB ESTABLISHMENT

- Plant shrub seedlings in early spring (late March through April) directly into soil where vegetation has been killed during the previous growing season with 1-2 applications of herbicides or by mechanical site preparation. Plant shrubs in areas that will not be mowed, or in rows to allow for mowing between the rows.
- Suppress weed growth around the shrubs with use of weed barrier fabric or herbicides.
- Install protective tubes or other barriers to reduce damage from rodents, rabbits and deer.

MANAGEMENT

- Manage weeds during the first year by mowing prior to seed production to prevent development and spread of weed seed.
- Manage weeds during following years by hand roguing, spot spraying, using pre-emergent herbicides or herbicides applied during phases of perennial dormancy.
- Do not apply fertilizer during the first year of establishment.

Establishment techniques different than those listed may be used, but only with extreme caution. The guidelines have proven to have the highest rates of success.

There are many challenges associated with establishing forb plots. Many forb seedlings fail due to poor seedbed preparation, poor seed germination/emergence, weed competition, and neglect. Establishing, monitoring and maintaining forb plantings may be expensive and labor-intensive. The area may have to be re-seeded if an adequate stand is not achieved the first time.

An alternative establishment method to seeding is transplanting forb seedlings. Transplanting seedlings may initially be more expensive than seeding but may be less expensive in the long run, especially if a seeded stand fails, and has to be reseeded. The advantages of forb seedlings are: there are no seed dormancy/germination concerns, they already have a developed root system, and they can better compete with weeds. To establish forb plugs, use the same planting guidelines listed above for shrub establishment. A disadvantage of transplanting seedlings may be lack of commercial sources of seedlings.

Species Descriptions

Additional information for many of these species can be found in NRCS Plant Guides and Fact Sheets, available by download from the PLANTS Database (<http://plants.usda.gov>). Seeding rates listed are full stand pure live seeding rates, derived from a target rate of 20-30 PLS/ft² for species with <500,000 PLS/lb, and 40-50 PLS/ft² for species with >500,000 PLS/lb. **Rates should be adjusted to reflect the percentage in the mixture when used as a part of a seed mixture (see example on page 9).** In Colorado, follow Colorado Plant Materials Technical Note 59 and ECS-5 for seeding rate instructions and specifications. For plants with multiple applicable species, for example Indian paintbrush (*Castilleja* spp.), select locally adapted and available species. Consult your plant materials specialist if you have any questions regarding appropriate species selection.

Forbs and Legumes



Western Yarrow. Derek Tilley, NRCS Idaho.

Achillea millefolium, western yarrow

Origin: native forb

Mature Height: 0.5-1.5 ft.

Growth Rate: rapid

Growth Habit: upright to prostrate

Wildlife Value: good forage

Attracts: butterflies, pollinating flies some bees

Flowers: white to yellow

Bloom: June-August

Seeding Rate: 0.5 lb/ac

Recommended precipitation range: 8-60 in.



Giant hyssop. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Agastache pallidiflora, giant hyssop

Origin: native forb

Mature Height: 2 feet

Growth Rate: rapid

Growth Habit: upright

Wildlife Value: good food

Attracts: bees

Flowers: purple

Bloom: July- September

Seeding Rate: 2 lb/ac

Recommended precipitation range: 12-24 in.

Plants for Pollinators in the Intermountain West



Nettleleaf giant hyssop. Derek Tilley, NRCS Idaho.

Agastache urticifolia, nettleleaf giant hyssop

Origin: native forb
 Mature Height: 2-3 ft.
 Growth Rate: rapid
 Growth Habit: upright
 Wildlife Value: good food
 Attracts: bees
 Flowers: lavender
 Bloom: June-July
 Seeding Rate: 2 lb/ac
 Recommended precipitation range: 18-36 in.



Western pearly everlasting. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Anaphalis margaritacea, western pearly everlasting

Origin: native forb
 Mature Height: 1-2 ft.
 Growth Rate: rapid
 Growth Habit: upright
 Wildlife Value: limited

Attracts: larval host plant of Virginia lady butterfly (*Vanessa virginiensis*).

Flowers: yellow
 Bloom: June-July
 Seeding Rate: 0.5 lb/ac
 Recommended precipitation range: 10-35 in.



Pussytoes. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Antennaria spp., pussytoes

Origin: native forb
 Mature Height: 1-2 ft.
 Growth Rate: rapid
 Growth Habit: mound
 Wildlife Value: poor forage
 Attracts: painted lady butterfly.
 Flowers: white-pink
 Bloom: June-July
 Seeding Rate: 0.5 lb/ac
 Recommended precipitation range: 8-40 in.



Blue columbine. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Aquilegia caerulea, blue columbine

Origin: native forb
 Mature Height: 1-2 ft.
 Growth Rate: moderate to rapid
 Growth Habit: upright

Plants for Pollinators in the Intermountain West

Wildlife Value: excellent food
Attracts: hummingbirds
Flowers: blue/white
Bloom: June-July
Broadcast Seeding Rate: 3 lb/ac
Recommended precipitation range: 20-40 in.
Note: avoid cultivated varieties



Showy milkweed. Derek Tilley, NRCS Idaho.

Asclepias speciosa, showy milkweed

Warning: Toxic, Limit use to non-grazed areas

Origin: native forb
Mature Height: 2-3 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: toxic to livestock
Attracts: butterflies; Larval host plant for the monarch (*Danaus plexippus*,) and the queen butterflies (*Danaus gilippus thersippus*), predacious insects
Flowers: pink
Bloom: May-July
Seeding Rate: 15 lb/ac
Recommended precipitation range: 16-30 in.



Butterfly milkweed, J.S. Peterson @ PLANTS Database.

Asclepias tuberosa, butterfly milkweed

Warning: Toxic, Limit use to non-grazed areas

Origin: native forb
Mature Height: 1-3 ft.

Growth Rate: rapid
Growth Habit: upright
Wildlife Value: toxic to livestock
Attracts: butterflies
Flowers: orange
Bloom: July-August
Seeding Rate: 15 lb/ac
Recommended precipitation range: 28-45 in.



Gray Aster. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Aster glaucodes, gray aster

Origin: native forb
Mature Height: 1-3 ft.
Growth Rate:
Growth Habit: upright
Wildlife Value: fair forage
Attracts: bees, butterflies
Flowers: blue/purple
Bloom: July-September
Seeding Rate: 3 lb/ac
Recommended precipitation range: 10-18 in.



Cicer milkvetch. Dan Ogle, NRCS Idaho.

Astragalus cicer, cicer milkvetch

Origin: introduced forb
Mature Height: 1-3 ft.

Plants for Pollinators in the Intermountain West

Growth Rate: moderate to rapid
 Growth Habit: upright (lodges at maturity)
 Wildlife Value: excellent forage
 Attracts: bees
 Flowers: cream
 Bloom: May-July
 Seeding Rate: 7 lb/ac
 Recommended precipitation range: 16-60 in.



Basalt milkvetch. Gary A. Monroe @ PLANTS Database.

Astragalus filipes, basalt milkvetch
 Origin: native legume
 Mature height: 1-3 ft.
 Growth Rate:
 Growth Habit: upright
 Wildlife Value: excellent forage
 Attracts: bees
 Flowers: white to cream
 Bloom: May-July
 Seeding Rate: 9 lb/ac
 Recommended precipitation range: 8-12 in.



© St. Mary's College of California
 Hooker's balsamroot. Alfred Brousseau @ USDA-NRCS PLANTS Database.

Balsamorhiza hookeri, Hooker's balsamroot
 Origin: native forb

Mature Height: 1-2 ft.
 Growth Rate: slow
 Growth Habit: upright
 Wildlife Value: excellent
 Attracts: bees
 Flowers: yellow
 Bloom: May-June
 Seeding Rate: 18 lb/ac
 Recommended precipitation range: 9-20 in



Cutleaf balsamroot. Teresa Prendusi, U.S. Forest Service.

Balsamorhiza macrophylla, cutleaf balsamroot
 Origin: native forb
 Mature Height: 1-2 ft.
 Growth Rate: slow
 Growth Habit: upright
 Wildlife Value: excellent
 Attracts: bees
 Flowers: yellow
 Bloom: May-June
 Seeding Rate: 18 lb/ac
 Recommended precipitation range: 14-40 in.



Arrowleaf balsamroot. Derek Tilley, NRCS Idaho.

Plants for Pollinators in the Intermountain West

Balsamorhiza sagittata, arrowleaf balsamroot

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: slow
Growth Habit: upright
Wildlife Value: excellent
Attracts: bees, butterflies
Flowers: yellow
Bloom: May-June
Seeding Rate: 18 lb/ac
Recommended precipitation range: 14-18 in.



Indian paintbrush. Derek Tilley, NRCS Idaho.

Castilleja spp., Indian paintbrush

Origin: native forb
Mature Height: 6-18 in
Growth Rate:
Growth Habit: upright
Wildlife Value: limited
Attracts: hummingbirds; Larval host plant of many scroph-feeding Western U.S. checkerspot butterflies including *Thessalia leanira alma*, *Euphydryas anicia wheeleri*, and *Euphydryas anicia*.
Flowers: red
Bloom: May-July
Seeding Rate: Paintbrush species are hemi-parasitic and require a host plant for establishment. Site appropriate transplants are recommended.
Recommended precipitation range: 8-15 in.



Douglas' dustymaiden. Derek Tilley, NRCS Idaho.

Chaenactis douglasii, Douglas' dustymaiden

Origin: native forb
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent food
Attracts: bees
Flowers: white to pinkish
Bloom: June-July
Seeding Rate: 3 lb/ac
Recommended precipitation range: 9-15 in.



Yellow beflower. Idaho Dept. of Transportation

Cleome lutea, Yellow beflower

Origin: native annual forb
Mature Height: 2-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: pollinator forage
Attracts: bees, wasps, butterflies
Flowers: yellow
Bloom: May-June
Seeding Rate: 11 lb/ac
Recommended precipitation range: 8-12 in.

Plants for Pollinators in the Intermountain West



Rocky Mountain bee plant. Casey Burns, NRCS Utah.

Cleome serrulata, Rocky Mountain beeplant

Origin: native annual forb

Mature Height: 2-3 ft.

Growth Rate: rapid

Growth Habit: upright

Wildlife Value: pollinator forage

Attracts: bees, wasps, butterflies

Flowers: purple

Bloom: May-June

Seeding Rate: 17 lb/ac

Recommended precipitation range: 13-55 in.



Tapertip hawksbeard. Derek Tilley, NRCS Idaho

Crepis acuminata, tapertip hawksbeard

Origin: native forb

Mature Height: 1-3 ft.

Growth Rate:

Growth Habit: upright

Wildlife Value: good forage

Attracts: bees

Flowers: yellow

Bloom: June-July

Seeding Rate: 3 lb/ac

Recommended precipitation range: 7-20 in.



Large flower hawksbeard .Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Crepis occidentalis, largeflower hawksbeard

Origin: native forb

Mature Height: 8-36 in

Growth Rate:

Growth Habit: upright

Wildlife Value: good forage

Attracts: bees

Flowers: yellow

Bloom: June-July

Seeding Rate: 10 lb/ac

Recommended precipitation range: 12-18 in.



White prairie clover. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Plants for Pollinators in the Intermountain West

Dalea candida, white prairie clover

Origin: native forb
Mature Height: 2-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees; larval host plant of the southern dogface butterfly (*Zerene cesonia*).
Flowers: white
Bloom: June-August
Seeding Rate: 4 lb/ac
Recommended precipitation range: 10-18 in.



Purple coneflower. Jeff McMillian @ PLANTS Database.

Echinacea purpurea, purple coneflower

Origin: introduced forb
Mature Height: 1.5-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: butterflies, bees
Flowers: white to purple
Bloom: July-September
Broadcast Seeding Rate: 9 lb/ac
Recommended precipitation range: 14-40 in.



Engelmann's aster. Photo by W. Padgett, BLM Utah.

Erigeron engelmannii, Engelmann's fleabane

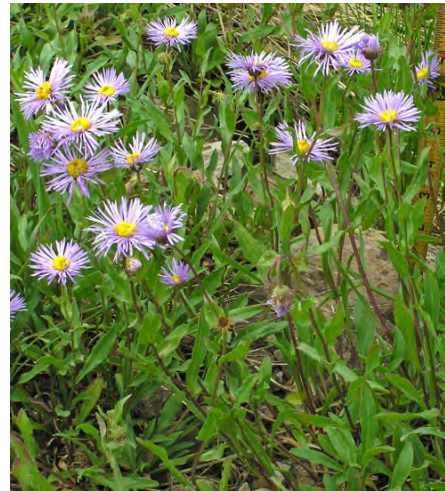
Origin: native forb
Mature Height: 2-18 in
Growth Rate: rapid
Growth Habit: upright to spreading
Wildlife Value: limited
Attracts: bees
Flowers: white-pink
Bloom: June-July
Seeding Rate: 1 lb/ac
Recommended precipitation range: 8-20 in.



Shaggy fleabane. Derek Tilley, NRCS Idaho.

Erigeron pumilus, shaggy fleabane

Origin: native forb
Mature Height: 2-18 in
Growth Rate: rapid
Growth Habit: upright to spreading
Wildlife Value: limited
Attracts: bees, butterflies
Flowers: purple
Bloom: May-June
Seeding Rate: 1 lb/ac
Recommended precipitation range: 6-17 in.



Aspen fleabane. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Plants for Pollinators in the Intermountain West

Erigeron speciosus, aspen fleabane

Origin: native forb
Mature Height: 0.5-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: limited forage value
Attracts: bees, butterflies
Flowers: pink/purple
Bloom: July-September
Seeding Rate: 1 lb/ac
Recommended precipitation range: 18-25 in.



Blanketflower. Casey Burns, NRCS Utah.

Gaillardia aristata, blanketflower

Origin: native forb
Mature Height: 1-1.5 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: excellent food and cover
Attracts: bees
Flowers: orange, yellow
Bloom: July-September
Seeding Rate: 6 lb/ac
Recommended precipitation range: 16-30 in.
Note: avoid cultivated varieties



Sticky geranium. Derek Tilley, NRCS Idaho.

Geranium viscosissimum, sticky geranium

Origin: native forb
Mature Height: 2-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value:
Attracts: bees, butterflies
Flowers: purple
Bloom: May-June
Seeding Rate: 20 lb/ac
Recommended precipitation range: 16-20 in.



Northern or Utah sweetvetch. USDA-ARS.

Hedysarum boreale, northern or Utah sweetvetch

Origin: native legume
Mature Height: 1-2 ft.
Growth Rate: moderate
Growth Habit: spreading to upright
Wildlife Value: good forage
Attracts: bees, butterflies
Flowers: red to purple
Bloom: May-June
Seeding Rate: 24 lb/ac
Recommended precipitation range: 12-18 in.



Oneflower sunflower. Teresa Predusi, USDA Forest Service.

Helianthella uniflora, oneflower sunflower

Origin: native forb
Mature Height: 1-3 ft.

Plants for Pollinators in the Intermountain West

Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good forage
Attracts: bees, ants
Flowers: yellow
Bloom: June-July
Seeding Rate: 26
Recommended precipitation range: 12-35 in.



Annual sunflower. A. Schneider @ PLANTS Database.

Helianthus annuus, annual sunflower
Origin: native forb
Mature Height: 2-5 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good winter food
Attracts: butterflies, bees, ants and birds
Flowers: yellow to orange
Bloom: July-September
Seeding Rate: 4 lb/ac
Recommended precipitation range: 8-15 in.



© Patrick J. Alexander
Prairie sunflower. Patrick J. Alexander @ USDA-NRCS PLANTS Database.

Helianthus petiolaris, prairie sunflower
Origin: native forb
Mature Height: 2-5 ft.

Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good winter food
Attracts: bees
Flowers: yellow
Bloom: July-September
Seeding Rate: 9 lb/ac
Recommended precipitation range: 9-18 in.



Showy goldeneye. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Heliomeris multiflora, showy goldeneye
Origin: native forb
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: cover
Attracts: bees
Flowers: yellow
Bloom: June-July
Seeding Rate: 2 lb/ac
Recommended precipitation range: 16-25 in.



Hairy false goldenaster. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Plants for Pollinators in the Intermountain West

Heterotheca villosa, hairy false goldenaster

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: cover for small animals
Attracts: bees
Flowers: yellow
Bloom: June-August
Seeding Rate: 3 lb/ac
Recommended precipitation range: 10-26 in.



Scarlet gilia. Derek Tilley, NRCS Idaho.

Ipomopsis aggregata, scarlet gilia

Origin: native biennial forb
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: limited
Attracts: hummingbirds, moths
Flowers: red, pink
Bloom: June-July
Seeding Rate: 3 lb/ac
Recommended precipitation range: 13-40 in.



Blue-flag iris. Casey Burns, NRCS Utah.

Iris missouriensis, Blue-flag iris

Origin: native forb
Mature Height: 3-4 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: limited
Attracts: bees, bumblebees, butterflies
Flowers: blue
Bloom: April-May
Seeding Rate: 54 lb/ac
Recommended precipitation range: 24-35 in.



Fewflower pea. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Lathyrus pauciflorus, fewflower pea

Origin: native forb
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: climbing vine
Wildlife Value: medium palatability
Attracts: bees; larval host for butterflies
Flowers: pink-purple
Bloom: April-May
Seeding Rate: 87 lb/ac
Recommended precipitation range: 5-14 in.

Plants for Pollinators in the Intermountain West



Dotted blazingstar. R. Alan Shadow, NRCS Texas.

Liatris punctata, dotted blazingstar

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: slow
Growth Habit: upright
Wildlife Value: good forage
Attracts: bees, butterflies
Flowers: pink-purple
Bloom: July-August
Seeding Rate: 9 lb/ac
Recommended precipitation range: 18-26 in.



Lewis flax. Derek Tilley, NRCS Idaho.

Linum lewisii, Lewis flax

Origin: native forb
Mature height: 1-2 ft.
Growth Rate: moderate to rapid
Growth Habit: upright
Wildlife value: excellent food

Attracts: bees
Flowers: light blue
Bloom: May-July
Seeding Rate: 4 lb/ac
Recommended precipitation range: 10-20 in.



Blue flax. Derek Tilley, NRCS Idaho.

Linum perenne, blue flax

Origin: introduced forb
Mature height: 1-2 ft.
Growth Rate: moderate to rapid
Growth Habit: upright
Wildlife value: excellent food
Attracts: bees
Flowers: light blue
Bloom: May-July
Seeding Rate: 4 lb/ac
Recommended precipitation range: 10-20 in.



Cardinal flower. William S. Justice @ USDA-NRCS PLANTS Database.

Plants for Pollinators in the Intermountain West

Lobelia cardinalis, cardinalflower

Origin: native forb
Mature Height: 1-4 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: hummingbird food
Attracts: hummingbirds
Flowers: red
Bloom: May-Oct
Seeding Rate: 0.2 lb/ac
Recommended precipitation range: 28-60 in.



Fernleaf biscuitroot. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Lomatium dissectum, fernleaf biscuitroot

Origin: native forb
Mature Height: 0.5-2 ft.
Growth Rate: slow
Growth Habit: erect
Wildlife Value: excellent food
Attracts: bees
Flowers: yellow green
Bloom: June-July
Seeding Rate: 24 lb/ac
Recommended precipitation range: 14-30 in.

Lomatium macrocarpum

Origin: native forb
Mature Height: 0.5-2 ft.
Growth Rate: moderate
Growth Habit: erect
Wildlife Value: good food
Attracts: bees
Flowers: white
Bloom: April-June
Seeding Rate: 10 lb/ac
Recommended precipitation range: 8-16 in.



Nineleaf biscuitroot. A. Schneider @ PLANTS Database.

Lomatium triternatum, nineleaf biscuitroot

Origin: native forb
Mature Height: 2-3 ft.
Growth Rate: slow
Growth Habit: erect
Wildlife Value: excellent food
Attracts: bees
Flowers: yellow green
Bloom: May-June
Seeding Rate: 20 lb/ac
Recommended precipitation range: 12-20 in.



Birdsfoot trefoil. R. Mohlenbrock @ PLANTS Database.

Lotus corniculatus, birdsfoot trefoil

Origin: introduced legume
Mature Height: 1.5-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good winter food
Attracts: bees
Flowers: yellow
Bloom: June-August
Seeding Rate: 3 lb/ac
Recommended precipitation range: 20-45 in.

Plants for Pollinators in the Intermountain West



Silver lupine. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Lupinus argenteus, silver lupine

Warning: May be toxic to animals and humans

Origin: native forb

Mature Height: 1.5-2 ft.

Growth Rate: rapid

Growth Habit: upright

Wildlife Value: forage

Attracts: bumble bees, bees, butterflies, hummingbirds

Flowers: blue to purple

Bloom: June - August

Seeding Rate: 70 lb/ac

Recommended precipitation range: 10-45 in.



Hoary tansyaster. Derek Tilley, NRCS Idaho.

Machaeranthera canescens, hoary tansyaster

Origin: native forb

Mature Height: 2-3 ft.

Growth Rate: rapid

Growth Habit: upright

Wildlife Value: forage

Attracts: bees, butterflies

Flowers: blue to purple

Bloom: August-October

Seeding Rate: 2 lb/ac

Recommended precipitation range: 8-15 in.

Machaeranthera tanacetifolia, tansyleaf aster

Origin: native forb

Mature Height: 0.5-2 ft.

Growth Rate: rapid

Growth Habit: upright

Wildlife Value: limited food

Attracts: bees, butterflies

Flowers: purple

Bloom: May-October

Seeding Rate: 3 lb/ac

Recommended precipitation range: 16-24 in.



Alfalfa. Derek Tilley, NRCS Idaho.

Medicago sativa, alfalfa

Origin: introduced legume

Mature Height: 2-3 ft.

Growth Rate: fast

Growth Habit: upright

Wildlife Value: excellent forage

Attracts: bees

Flowers: purple

Bloom: May-July (delay by cutting)

Seeding Rate: 10 lb/ac

Recommended precipitation range: 12-65 in.

Plants for Pollinators in the Intermountain West



Yellow blossom alfalfa. Derek Tilley, NRCS Idaho.

Medicago sativa* ssp. *falcata, yellow blossom alfalfa

Origin: introduced legume

Mature Height: 2-3 ft.

Growth Rate: fast

Growth Habit: upright, spreading

Wildlife Value: excellent forage

Attracts: bees

Flowers: yellow

Bloom: May – July (delay by cutting)

Seeding Rate: 10 lb/ac

Recommended precipitation range: 10-25 in.



Yellow sweetclover. J.S. Peterson @ PLANTS Database.

Melilotus alba* and *M. officinalis, white and yellow sweetclover

Origin: introduced legume

Mature Height: 1-3 ft.

Growth Rate: rapid

Growth Habit: upright

Wildlife Value: fair forage

Attracts: bees

Flowers: white or yellow

Bloom: June-July

Seeding Rate: 1 lb/ac

Recommended precipitation range: 9-18 in.

Note: can become invasive; not recommended in wildlands



Bee balm. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Mondarda fistulosa, bee balm

Origin: native forb

Mature Height: 1-3 ft.

Growth Rate: moderate

Growth Habit: upright

Wildlife Value: limited food

Attracts: bees, bumblebees

Flowers: purple

Bloom: June-September

Seeding Rate: 2 lb/ac

Recommended precipitation range: 20-60 in.



Sainfoin. Derek Tilley. NRCS Idaho.

Onobrychis viciifolia, sainfoin

Origin: introduced legume

Mature Height: 2-5 ft.

Growth rate: rapid

Growth Habit: upright

Plants for Pollinators in the Intermountain West

Wildlife Value: excellent forage
Attracts: larger bees
Flowers: pink
Bloom: May-July (delay by cutting)
Seeding Rate: 34 lb/ac
Recommended precipitation range: 14-45 in.



Sharpleaf penstemon. Photo by Cassondra Skinner, USDI-BLM, Idaho.

Penstemon acuminatus, sharpleaf penstemon
Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value:
Attracts: bees
Flowers: blue
Bloom: May-July
Seeding Rate: 3 lb/ac
Recommended precipitation range: 12-30 in.



Narrowleaf penstemon. USDA NRCS Los Lunas Plant Materials Center, Los Lunas, New Mexico.

Penstemon angustifolius, narrowleaf penstemon
Origin: native forb
Mature Height: 8-20 in
Growth Rate: rapid

Growth Habit: upright
Wildlife Value: limited
Attracts: bees, hummingbirds
Flowers: lavender
Bloom: May-June
Broadcast Seeding Rate: 3 lb/ac
Recommended precipitation range: 9-35 in.



Firecracker penstemon. Derek Tilley, NRCS Idaho.

Penstemon eatonii, firecracker penstemon
Origin: native forb
Mature Height: 1-2.5 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees, wasps, hummingbirds
Flowers: red
Bloom: April-June
Broadcast Seeding Rate: 4 lb/ac
Recommended precipitation range: 10-18 in.



Low penstemon. Derek Tilley, NRCS Idaho.

Penstemon humilis, low penstemon
Origin: native forb

Plants for Pollinators in the Intermountain West

Mature Height: 3-8 in
Growth Rate: moderate
Growth Habit: erect, semi mat-forming
Wildlife Value: limited
Attracts: bees
Flowers: purple
Bloom: May-June
Seeding Rate: 2 lb/ac
Recommended precipitation range: 12-20 in.



Toadflax penstemon. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Penstemon linarioides, toadflax penstemon

Origin: native forb
Mature Height: 6-18 in
Growth Rate: moderate
Growth Habit: subshrub, upright
Wildlife Value: food
Attracts: bees
Flowers: lavender/blue
Bloom: May-July
Broadcast Seeding Rate: 2 lb/ac
Recommended precipitation range: 12-20 in.

Penstemon pachyphyllus, thicketleaf beardtongue

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good forage
Attracts: bees
Flowers: blue/purple
Bloom: May-June
Broadcast Seeding Rate: 3 lb/ac
Recommended precipitation range: 12-20 in.



Palmer's penstemon Stan Young, Utah Crop Improvement Association. Used with permission.

Penstemon palmeri, Palmer's penstemon

Origin: native forb
Mature Height: 2-3 ft.
Growth Rate: rapid
Growth Habit: erect
Wildlife Value: fair forage
Attracts: larger bees
Flowers: pink
Bloom: May-July
Broadcast Seeding Rate: 3 lb/ac
Recommended precipitation range: 6-12 in.

Penstemon rydbergii, Rydberg's penstemon

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: limited
Attracts: small bees
Flowers: blue
Bloom: June-July
Broadcast Seeding Rate: 8 lb/ac
Recommended precipitation range: 20-30 in.

Plants for Pollinators in the Intermountain West



Royal penstemon. Derek Tilley, NRCS Idaho.

Penstemon speciosus, royal penstemon

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: good forage
Attracts: bees, moths
Flowers: blue, pink
Bloom: May-July
Seeding Rate: 3 lb/ac
Recommended precipitation range: 8-24 in.

Penstemon spectabilis, showy penstemon

Origin: native forb
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: food, cover
Attracts: bees, wasps
Flowers: pink/purple
Bloom: April-June
Seeding Rate: 3 lb/ac
Recommended precipitation range: 12-40 in.



Rocky Mountain penstemon. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Penstemon strictus, Rocky Mountain penstemon

Origin: native forb
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit:
Wildlife Value: fair forage
Attracts: bees
Flowers: purple
Bloom: May-July
Seeding Rate: 2 lb/ac
Recommended precipitation range: 14-26 in.



Silverleaf phacelia. Derek Tilley, NRCS Idaho.

Phacelia hastata, silverleaf phacelia

Origin: native forb
Mature Height: 1-2 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: limited
Attracts: bees

Plants for Pollinators in the Intermountain West

Flowers: lavender
Bloom: May-August
Seeding Rate: 7 lb/ac
Recommended precipitation range: 10-18 in.



Silky phacelia. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Phacelia sericea, silky phacelia
Origin: native forb
Mature Height: 1-3 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: limited
Attracts: bees
Flowers: purple
Bloom: June-July
Seeding Rate: 3 lb/ac
Recommended precipitation range: 18-30 in.



Cinquefoil. Derek Tilley, NRCS Idaho.

Potentilla arguta, tall cinquefoil
Origin: native forb
Mature Height: 2-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: flowers are palatable
Attracts: bees
Flowers: yellow
Bloom: May-June
Seeding Rate: 0.5 lb/ac
Recommended precipitation range: 10-50 in.



Prairie coneflower. C.A. Rechenhain @ PLANTS Database.

Ratbida columnifera, prairie coneflower
Origin: introduced forb (native to the east of the Continental Divide)
Mature Height: 1-1.5 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: poor to fair forage
Attracts: bees
Flowers: yellow/orange
Bloom: June-August
Seeding Rate: 3 lb/ac
Recommended precipitation range: 16-40 in.



Small burnet. Derek Tilley, NRCS Idaho.

Plants for Pollinators in the Intermountain West

Sanguisorba minor, small burnet

Origin: introduced forb
Mature Height: 1-2.5 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: green-red
Bloom: June-August
Seeding Rate: 26 lb/ac
Recommended precipitation range: 15-25 in.



Scarlet globemallow. Derek Tilley, NRCS Idaho.

Sphaeralcea coccinea, scarlet globe mallow

Origin: native forb
Mature Height: 6-18 in
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: orange/red
Bloom: April-June
Seeding Rate: 3 lb/ac
Recommended precipitation range: 6-15 in.

Sphaeralcea grossulariifolia, gooseberryleaf globe mallow

Origin: native forb
Mature Height: 1.5-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: orange to red
Bloom: April-June
Seeding Rate: 3 lb/ac
Recommended precipitation range: 8-15 in.



Small flower globemallow. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Sphaeralcea parvifolia, small flower globemallow

Origin: native forb
Mature Height: 6-18 in
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: orange/red
Bloom: April-June
Seeding Rate: 3 lb/ac
Recommended precipitation range: 6-15 in.



Aster. G.A. Cooper @ PLANTS Database.

Symphyotrichum ascendens, western aster

Origin: native forb
Mature Height: 0.5-3 ft.
Growth Rate: moderate
Growth Habit: upright

Plants for Pollinators in the Intermountain West

Wildlife Value: excellent food and cover
Attracts: bees
Flowers: pink/purple
Bloom: July-October
Seeding Rate: 1 lb/ac
Recommended precipitation range: 14-60 in.



Mountain goldenbanner. Derek Tilley, NRCS Idaho.

Thermopsis montana, goldenbanner
Warning: Toxic, Limit use to non-grazed areas
Origin: native legume
Mature Height: 24-30 in
Growth Rate: medium
Growth Habit: erect
Wildlife Value: toxic
Attracts: bee, bumblebees
Flowers: yellow
Bloom: May-June
Seeding Rate: 36 lb/ac
Recommended precipitation range: 24-30 in.

Trifolium fragiferum, strawberry clover
Origin: introduced legume
Mature Height: 1-18 in
Growth Rate: rapid
Growth Habit: decumbent to ascending
Wildlife Value: excellent food
Attracts: bees
Flowers: pink
Bloom: April-May
Seeding Rate: 4 lb/ac
Recommended precipitation range: 20-60 in.

Trifolium hybridum, alsike clover

Origin: introduced legume
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: white/pink
Bloom: April-May
Seeding Rate: 3 lb/ac
Recommended precipitation range: 25-60 in.



White clover. L. Allain@PLANTS Database.

Trifolium repens, white clover
Origin: introduced legume
Mature Height: 4-14 in
Growth Rate: rapid
Growth Habit: creeping
Wildlife Value: forage
Attracts: bees
Flowers: white
Bloom: May-July
Seeding Rate: 3 lb/ac
Recommended precipitation range: 24-70 in.



American vetch. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Plants for Pollinators in the Intermountain West

Vicia americana, American vetch

Origin: native legume

Mature Height: 0.5-1 ft.

Growth Rate: rapid

Growth Habit: spreading

Wildlife Value: excellent forage

Attracts: bees

Flowers: purple

Bloom: May-June

Seeding Rate: 34 lb/ac

Recommended precipitation range: 9-50 in.



Mule-ears. Andy Degues, USFS.

Wyethia amplexicaulis, mule-ears

Origin: native forb

Mature Height: 1-3 ft.

Growth Rate: moderate

Growth Habit: upright

Wildlife Value: flower heads eaten by deer

Attracts: bees, bumblebees, butterflies

Flowers: yellow

Bloom: May-June

Seeding Rate: 39 lb/ac

Recommended precipitation range: 12-20 in.

Trees, Shrubs, and Half-Shrubs



Serviceberry. Derek Tilley, NRCS Idaho.

Amelanchier alnifolia, serviceberry
 Origin: native shrub-small tree
 Mature Height: 6-15 ft.
 Growth Rate: slow
 Growth Habit: upright
 Wildlife Value: good cover and food
 Attracts: butterflies, bees
 Flowers: white
 Bloom: May-June
 Seeding Rate: seedlings recommended
 In-row Spacing: 5-10 ft.
 Recommended precipitation range: 12-30 in.

Amelanchier utahensis, Utah service berry
 Origin: native shrub
 Mature Height: 3-12 ft.
 Growth Rate: rapid
 Growth Habit: upright
 Wildlife Value: cover and food
 Attracts: butterflies, bees; larval butterfly host plant of the weidemeyer's admiral (*Limenitis weidemeyeri*) and the lorquin's admiral (*Limenitis lorquini*).
 Flowers: white
 Bloom: May-June
 Seeding Rate: seedlings recommended
 In-row Spacing: 5-10 ft.
 Recommended precipitation range: 12-20 in.



Greenleaf manzanita. Gary A. Monroe @ PLANTS Database.

Arctostaphylos patula, Greenleaf manzanita
 Origin: native shrub
 Mature Height: 3-6 ft.
 Growth Rate: slow
 Growth Habit: rounded shrub
 Wildlife Value: good cover and browse
 Attracts: bees
 Flowers: pink
 Bloom: April-June
 Seeding Rate: seedlings recommended
 In-row Spacing: 5 ft.
 Recommended precipitation range: 13-60 in.

Arctostaphylos uva-ursi, kinnikinnik
 Origin: native shrub
 Mature Height: 6 in
 Growth Rate: moderate
 Growth Habit: prostrate creeping
 Wildlife Value: fruit provide food for birds
 Attracts: bees, butterflies, hummingbirds
 Flowers: pink
 Bloom: March-June
 Seeding Rate: seedlings recommended
 In-row Spacing: 2-3 ft.
 Recommended precipitation range: 18-45 in.



Photo left. *Eucosma ragonoti*, moth on prairie sagewort, Christine Taliga, Colorado Plant Materials Program.

Plants for Pollinators in the Intermountain West

Artemisia frigida, prairie sagewort

Origin: native shrub
Mature Height: 4-16 in.
Growth Rate: moderate
Growth Habit: upright low shrub
Wildlife Value: good cover and forage
Attracts: provides habitat and nesting structure; used as food plants by the larvae of a number of Lepidoptera species and other insects.
Flowers: yellow
Bloom: August-September
Seeding Rate: 0.5 lb/ac
In-row Spacing: 1-3 ft.
Recommended precipitation range: 10-40 in.

Artemisia nova, black sagebrush

Origin: native shrub
Mature Height: 4-12 in
Growth Rate: moderate
Growth Habit: upright low shrub
Wildlife Value: good cover and forage
Attracts: provides habitat and nesting structure
Flowers: yellow
Bloom: August-September
Seeding Rate: 2 lb/ac
In-row Spacing: 1-3 ft.
Recommended precipitation range: 6-18 in.



Basin big sagebrush. Derek Tilley, NRCS Idaho.

Artemisia tridentata ssp. tridentata, basin big sagebrush

Origin: native shrub

Mature Height: 3-8 ft.
Growth Rate: slow
Growth Habit: upright shrub
Wildlife Value: cover and food
Attracts: provides habitat and nesting structure
Flowers: yellow
Bloom: September-October
Seeding Rate: 0.5 lb/ac
In-row Spacing: 3-6 ft.
Recommended precipitation range: 9-15 in.

Artemisia tridentata ssp. vaseyana, mountain big sagebrush

Origin: native shrub
Mature Height: 2-4 ft.
Growth Rate: slow
Growth Habit: upright shrub
Wildlife Value: cover and food
Attracts: provides habitat and nesting structure
Flowers: yellow
Bloom: September-October
Seeding Rate: 0.5 lb/ac
In-row Spacing: 3-6 ft.
Recommended precipitation range: 16-25 in



Wyoming big sagebrush. Derek Tilley, NRCS Idaho.

Artemisia tridentata ssp. wyomingensis, Wyoming big sagebrush

Origin: native shrub
Mature Height: 2-3 ft.
Growth Rate: slow
Growth Habit: upright shrub
Wildlife Value: cover and food
Attracts: provides habitat and nesting structure
Flowers: yellow
Bloom: September-October
Seeding Rate: 0.5 lb/ ac
In-row Spacing: 3-6 ft.
Recommended precipitation range: 8-13 in.

Plants for Pollinators in the Intermountain West



Fourwing saltbush. Derek Tilley, NRCS Idaho.

Atriplex canescens, fourwing saltbush
Origin: native shrub
Mature Height: 1-6 ft.
Growth Rate: slow
Growth Habit: upright shrub
Wildlife Value: cover and browse
Attracts: provides habitat and nesting structure
Flowers: green/brown
Bloom: August-September
Seeding Rate: 2 lb/ac
In-row Spacing: 3-6 ft.
Recommended precipitation range: 8-16 in.



Mule-fat. USDA PLANTS Database.

Baccharis salicifolia, mule-fat
Origin: native shrub
Mature Height: 6-10 ft.
Growth Rate: rapid
Growth Habit: upright shrub
Wildlife Value:

Attracts: butterflies
Flowers: white
Bloom: April-July
Seeding Rate: seedlings recommended
In-row Spacing: 8-10 ft.
Recommended precipitation range: 10-15 in.

Ceanothus velutinus, snowbrush ceanothus
Origin: native shrub
Mature Height: 2-5 ft.
Growth Rate: moderate
Growth Habit: rounded shrub
Wildlife Value:
Attracts: butterflies
Flowers: white
Bloom: May-June
Seeding Rate: seedlings recommended
In-row Spacing: 3ft.
Recommended precipitation range: 16-40 in.



Desert sweet. Nevada native Plant Society @ PLANTS Database.

Chamaebatiaria millefolium, desert sweet
Origin: native shrub
Mature Height: 3-7 ft.
Growth Rate: moderate
Growth Habit: upright shrub
Wildlife Value: cover
Attracts: bees
Flowers: white
Bloom: July-September
Broadcast Seeding Rate: 8 lb/ac
In-row Spacing: 8-12 ft.
Recommended precipitation range: 15-60 in.

Chrysothamnus viscidiflorus, yellow rabbitbrush
Origin: native shrub
Mature Height: 1-3 ft.

Plants for Pollinators in the Intermountain West

Growth Rate: moderate
Growth Habit: upright shrub
Wildlife Value: browse and cover
Attracts: butterflies, bees and other beneficial insects
Flowers: yellow
Bloom: September-October
Seeding Rate: 0.25 lb/ac
In-row Spacing: 2-3 ft.
Recommended precipitation range: 7-15 in.

Cornus sericea, redosier dogwood

Origin: native shrub
Mature Height: 4-12 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: food and cover
Attracts: bees, butterflies
Flowers: white
Blooms: May-June
Seeding Rate: seedlings recommended
In-row Spacing: 5-10 ft.
Recommended precipitation range: 12-60 in.



Black hawthorn. Susan McDougall @ PLANTS Database

Crataegus douglasii, black hawthorn

Origin: native shrub-small tree
Mature Height: 12-15 ft.
Growth Rate: slow
Growth Habit: upright
Wildlife Value: food and cover
Attracts: moths, bees, butterflies
Flowers: white
Blooms: May-June
Seeding Rate: seedlings recommended
In-row Spacing: 5-10 ft.
Recommended precipitation range: 16-60 in.



Shrubby cinquefoil. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Dasiphora fruticosa, shrubby cinquefoil

Origin: native shrub
Mature Height: 2-4 ft.
Growth Rate: slow
Growth Habit: upright
Wildlife Value: food and cover
Attracts: moths, bees, butterflies
Flowers: yellow
Blooms: May-June
Seeding Rate: seedlings recommended
In-row Spacing: 4-6 ft.
Recommended precipitation range: 18-25 in.



Rubber rabbitbrush. USDI-BLM.

Ericameria nauseosa, rubber rabbitbrush

Origin: native shrub
Mature Height: 2-6 ft.
Growth Rate: moderate
Growth Habit: open spreading
Wildlife Value: loafing, food and browse
Attracts: butterflies, bees, and other beneficial insects
Flowers: yellow
Bloom: August-October
Seeding Rate: 0.25 lb/ac
In-row Spacing: 3-6 ft.
Recommended precipitation range: 7-16 in.

Plants for Pollinators in the Intermountain West



Whorled buckwheat. Derek Tilley, NRCS Idaho.

Eriogonum heracleoides, whorled buckwheat
 Origin: native sub-shrub
 Mature Height: 1-3 ft.
 Growth Rate: moderate
 Growth Habit: spreading, open sub-shrub
 Wildlife Value: cover, fall forage
 Attracts: moths, butterflies, bees and other beneficial insects
 Flowers: white, cream
 Bloom: July-September
 Seeding Rate: 6 lb/ac
 In-row Spacing: 1-3 ft.
 Recommended precipitation range: 12-25 in.



Sulphurflower buckwheat. Derek Tilley, NRCS Idaho.

Eriogonum umbellatum, sulphurflower buckwheat
 Origin: native sub-shrub

Mature Height: 0.5-2 ft.
 Growth Rate: moderate
 Growth Habit: spreading, open sub-shrub
 Wildlife Value: cover, fall forage
 Attracts: moths, butterflies, bees, and other beneficial insects
 Flowers: yellow
 Bloom: July-September
 Seeding Rate: 4 lb/ac
 In-row Spacing: 1-3 ft.
 Recommended precipitation range: 12-25 in.

Fallugia paradoxa, Apache plume
 Origin: native shrub
 Mature Height: 4-6 ft.
 Growth Rate: rapid
 Growth Habit: upright shrub
 Wildlife Value: cover
 Attracts: bees and butterflies
 Flowers: white-purple
 Bloom: May-June
 Seeding Rate: seedlings recommended
 In-row Spacing: 4-6 ft.
 Recommended precipitation range: 8-20 in.

Forestiera neomexicana, stretchberry
 Origin: native shrub
 Mature Height: 4-6 ft.
 Growth Rate: moderate
 Growth Habit: shrub
 Wildlife Value: cover
 Attracts: butterflies
 Flowers: yellow
 Bloom: April-May
 Seeding Rate: seedlings recommended
 In-row Spacing: 4-6 ft.
 Recommended precipitation range: 9-24 in.



Oceanspray. Gary Monroe @ PLANTS Database.

Holodiscus discolor, oceanspray
 Origin: native shrub-small tree
 Mature Height: 6-20 ft.

Plants for Pollinators in the Intermountain West

Growth Rate: moderate
Growth Habit: upright shrub
Wildlife Value: cover and browse
Attracts: butterflies, bees
Flowers: white
Bloom: May-August
Seeding Rate: seedlings recommended
In-row Spacing: 10-20 ft.
Recommended precipitation range: 18-24 in.

Holodiscus dumosus, rockspirea

Origin: native shrub
Mature Height: 6-12 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: browse and cover
Attracts: butterflies, bees
Flowers: white
Bloom: June-August
Seeding Rate: seedlings recommended
In-row Spacing: 10-20 ft.
Recommended precipitation range: 10-35 in.

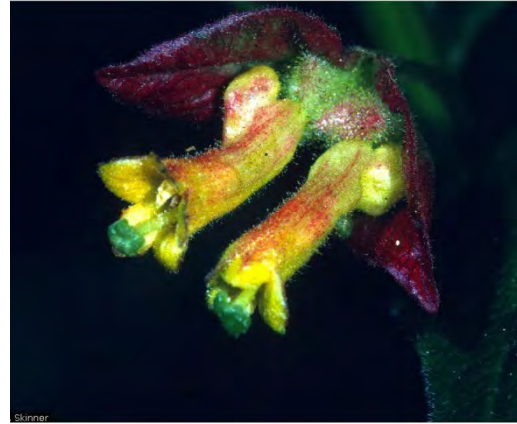


Winterfat. Derek Tilley, NRCS Idaho.

Krascheninnikovia lanata, winterfat

Origin: native shrub
Mature Height: 1-3 ft.
Growth Rate: rapid
Growth Habit: low shrub
Wildlife Value: excellent winter forage
Attracts: provides nesting structure for bees
Flowers: green/white
Bloom: July-August

Broadcast Seeding Rate: 2 lb/ac
In-row Spacing: 3 ft.
Recommended precipitation range: 7-12 in.



Twinberry honeysuckle. Mark Skinner @ PLANTS Database.

Lonicera involucrata, twinberry honeysuckle

Origin: native shrub
Mature Height: 2-7 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: cover, food for birds
Attracts: butterflies, hummingbirds
Flowers: yellow
Bloom: March-July
Seeding Rate: seedlings recommended
In-row Spacing: 6 ft.
Recommended precipitation range: 14-32 in.



Prickly pear cactus. Casey Burns, NRCS Utah.

Opuntia spp., prickly pear cactus

Origin: native shrub
Mature Height: 1-2 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: cover
Attracts: bees, beetles
Flowers: yellow, pink

Plants for Pollinators in the Intermountain West

Bloom: May-June
Seeding Rate: 8 lb/ac
In-row Spacing: 4 ft.
Recommended precipitation range: 10-20 in.

Philadelphus microphyllus, littleleaf mockorange

Origin: native shrub
Mature Height: 3-7 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: cover
Attracts: bees
Flowers: white
Bloom: March-May
Seeding Rate: seedlings recommended
In-row Spacing: 6 ft.
Recommended precipitation range: 12-20 in.

Poliomintha incana, frosted mint

Origin: native shrub
Mature Height: 1-3 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: cover
Attracts: bees
Flowers: purple
Bloom: May-August
Seeding Rate: seedlings recommended
In-row Spacing: 3 ft.
Recommended precipitation range: 8-12 in.

Prunus americana, American plum

Origin: native shrub
Mature Height: 8-10 ft.
Growth Rate: moderate
Growth Habit: rounded crown, suckers
Wildlife Value: nesting, loafing, food, browse
Attracts: butterflies, bees
Flowers: white
Bloom: April-May
Seeding Rate: seedlings recommended
In-row Spacing: 6-10 ft.
Recommended precipitation range: 16-40 in.



Chokecherry. Derek Tilley, NRCS Idaho.

Prunus virginiana, chokecherry

Origin: native shrub
Mature Height: 12-25 ft.
Growth Rate: moderate
Growth Habit: oval to round; suckering
Wildlife Value: excellent food and cover
Attracts: bees, butterflies
Flowers: white
Bloom: April-May
Seeding Rate: seedlings recommended
In-row Spacing: 8-12 ft.
Recommended precipitation range: 16-60 in.

Purshia glandulosa, desert bitterbrush

Origin: native shrub
Mature Height: 3-7 ft.
Growth Rate: slow
Growth Habit: upright
Wildlife Value: cover, fall forage
Attracts: bees
Flowers: yellow
Bloom: April-May
Seeding Rate: seedlings recommended
In-row Spacing: 5 ft.
Recommended precipitation range: 5-12 in.

Purshia mexicana, Mexican cliffrose

Origin: native shrub
Mature Height: 2-10 ft.
Growth Rate: moderate
Growth Habit: upright shrub
Wildlife Value: cover, fall forage
Attracts: butterflies, bees
Flowers: yellow
Seeding Rate: seedlings recommended
Bloom: May-June
In-row Spacing: 5-10 ft.
Recommended precipitation range: 6-12 in.

Plants for Pollinators in the Intermountain West



Antelope bitterbrush. Derek Tilley, NRCS Idaho.

Purshia tridentata, antelope bitterbrush

Origin: native shrub
Mature Height: 2-6 ft.
Growth Rate: moderate
Growth Habit: upright shrub
Wildlife Value: cover, fall forage
Attracts: butterflies, bees
Flowers: yellow
Seeding Rate: seedlings recommended
Bloom: May-June
In-row Spacing: 3-5 ft.
Recommended precipitation range: 10-15 in.



Skunkbush sumac. Derek Tilley, NRCS Idaho.

Rhus trilobata, skunkbush sumac

Origin: native shrub
Mature Height: 6-8 ft.
Growth Rate: slow to moderate
Growth Habit: ascending to spreading
Wildlife Value: browse, nesting, bird food
Attracts: early bees
Flowers: light yellow
Seeding Rate: seedlings recommended
Bloom: May-June
In-row Spacing: 4-6 ft.
Recommended precipitation range: 8-18 in.



Golden currant. Derek Tilley, NRCS Idaho.

Ribes aureum, golden currant

Origin: native shrub
Mature Height: 5-8 ft.
Growth Rate: moderate
Growth Habit: spreading and upright
Wildlife Value: roosting, loafing, nesting, fruit
Attracts: early spring bees, bumblebees
Flowers: fragrant golden yellow
Seeding Rate: seedlings recommended
Bloom: April-May
In-row Spacing: 4-6 ft.
Recommended precipitation range: 12-18 in.

Ribes cereum, wax currant

Origin: native shrub
Mature Height: 2-5 ft.
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: cover, nesting, fruit
Attracts: bees
Flowers: white
Bloom: May-June
Seeding Rate: seedlings recommended
In-row Spacing: 5 ft.

Plants for Pollinators in the Intermountain West

Recommended precipitation range: 13-35 in.



Wood's rose. Derek Tilley, NRCS Idaho.

Rosa woodsii, Wood's rose

Origin: native shrub
Mature Height: 3-6 ft.
Growth Rate: moderate
Growth Habit: upright to semi-weeping shrub
Wildlife Value: nesting, cover, excellent food
Attracts: bees
Flowers: pink
Seeding Rate: seedlings recommended
Bloom: June-July
In-row Spacing: 3-5 ft.
Recommended precipitation range: 12-40 in.

Salix spp, willow

Origin: native shrub, multiple-stemmed small tree
Mature Height: 12-18 ft.
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: cover, nesting
Attracts: bees, butterflies
Flowers: yellow-green
Bloom: April-May
Seeding Rate: cuttings recommended
In-row Spacing: 6-10 ft.
Recommended precipitation range: 20-60 in.



Buffaloberry. R.A. Howard @ PLANTS Database.

Shepherdia argentea, buffalo berry

Origin: native shrub
Mature Height: 6-20 ft.
Growth Rate: moderate
Growth Habit: upright to spreading tall shrub
Wildlife Value: browse, fruit
Attracts: butterflies, bees
Flowers: male=yellow; female=inconspicuous
Seeding Rate: seedlings recommended
Bloom: May-July
In-row Spacing: 8-10 ft.
Recommended precipitation range: 12-20 in.



Goldenrod. Casey Burns, NRCS Utah.

Solidago spp, goldenrod

Warning: Toxic when dried as hay
Origin: native shrub
Mature Height: 1-7 ft.
Growth Rate: moderate
Growth Habit: rhizomatous shrub
Wildlife Value: fair forage
Attracts: bees, wasps, beetles
Flowers: yellow
Seeding Rate: seedlings or 0.5 PLS/ac
Bloom: August-September
In-row Spacing: 3-5 ft.
Recommended precipitation range: 16-60 in.

Plants for Pollinators in the Intermountain West



Snowberry. R.A. Howard @ PLANTS Database.

Symphoricarpos oreophilus, mountain snowberry

Origin: native shrub
Mature Height: 2-4 ft.
Growth Rate: moderate
Growth Habit: open and spreading
Wildlife Value: loafing, food, browse
Attracts: butterflies, bees, hummingbirds
Flowers: pink
Seeding Rate: seedlings recommended
Bloom: May-August
In-row Spacing: 3-4 ft.
Recommended precipitation range: 14-45 in.



Yucca. Photo ©Al Schneider, www.swcoloradowildflowers.com, used with permission.

Yucca spp., yucca or soapweed

Origin: native to the Great Plains
Mature Height: 2-4 ft.
Growth Rate: slow
Growth Habit: upright
Wildlife Value: cover
Attracts: moths
Flowers: creamy white
Seeding Rate: seedlings recommended
Blooms: June-July
In-row Spacing: 3 ft.
Recommended precipitation range: 7-60 in.

NRCS APPROVED POLLINATOR PLANT LISTS








































The following tables lists plants approved for use in NRCS pollinator plantings. These species have known value for pollinators and are adapted to various precipitation ranges in eastern Utah and western Colorado. Care was taken to list species that are commercially available. Additional species may be available or become available that were not considered for this technical note during publication. Consult your State Plant Materials Specialist prior to making any species substitutions.

Species with an asterisk (*) are known to establish easily and are commercially available in large quantities. It is strongly recommended several of these species be included in all mixes.

This section also lists additional grasses and shrubs, which do not provide pollen or nectar, yet are important elements of pollinator habitat, and should be included in pollinator or wildlife friendly plantings, but may not count towards the CRP required species, or other programmatic guidelines. Several conservation programs are administered by USDA NRCS to assist private landowners in developing pollinator habitat, such as the Environmental Quality Incentives Program (EQIP), the Wildlife Habitat Incentives Program (WHIP), the Conservation Stewardship Program (CSP), and the Conservation Reserve Program (CRP). For additional information, please consult your local [NRCS Service Center](#).

Plants for Pollinators in the Intermountain West
































TABLE 2. FORB AND LEGUME CHARACTERISTICS LISTED BY PRECIPITATION REQUIREMENTS

Latin Name	Common Name	Bloom Time and Color			Origin	Character	Height (in)	Seedling Vigor	Longevity	Precip. Range (in)	Soils		
		Early	Mid.	Late							Fine	Med.	Coarse
<i>Lathyrus pauciflorus</i>	Pea, fewflower				N	Vine	8-30	**	**	5-14	x	x	x
<i>Penstemon palmeri</i>	Penstemon, Palmer's				N	Erect	24-36	V. Low	Medium	6-12		x	x
<i>Machaeranthera bigelovii</i>	Tansyaster, Bigelow's				N	Erect	12-36	**	Short	6-15	x	x	x
<i>Penstemon cyanocaulis</i>	Penstemon, bluestem				N	Erect	8-18	V. Low	Medium	6-15		x	x
<i>Sphaeralcea coccinea</i>	Globemallow, scarlet				N	Erect	12-18	Low	Short	6-15		x	x
<i>Erigeron pumilus</i>	Fleabane, shaggy				N	Decumbent	4-12	**	**	6-17		x	x
<i>Sphaeralcea parvifolia</i>	Small flower globemallow				N	Erect	6-18	Low	Short	6-18		x	x
<i>Crepis acuminata</i>	Hawksbeard, tapertip				N	Erect	10-30	Low	Long	7-20		x	x
<i>Astragalus filipes</i>	Milkvetch, basalt				N	Erect	12-36	Low	Medium	8-12		x	x
<i>Cleome lutea</i>	Beeflower, yellow				N	Erect	24-36	Med.-Rapid	Annual	8-12	x	x	
<i>Castilleja spp.</i>	Paintbrush, Indian				N	E	6-18	Low	Short	8-15			
<i>Helianthus annuus*</i>	Sunflower, annual				N	Erect	36-120	Medium	Annual	8-15	x	x	x
<i>Machaeranthera canescens</i>	Tansyaster, hoary				N	Erect	24-36	Low	Short	8-15		x	x
<i>Sphaeralcea grossulariifolia</i>	Globemallow, gooseberryleaf				N	Erect	18-36	Low	Long	8-15		x	x
<i>Lomatium macrocarpum</i>	Biscuitroot, bigseed				N	Prostrate	5-12	Medium	Short	8-16			x
<i>Erigeron engelmannii</i>	Fleabane, Engelmann's				N	Erect	9-12	**	**	8-20	x	x	x
<i>Penstemon speciosus</i>	Penstemon, royal				N	Erect	12-24	V. Low	Medium	8-24		x	x
<i>Antennaria sp. (rosea)</i>	Pussytoes				N	Mat	6-12	V. Low	**	8-40	x	x	x
<i>Achillea millefolium*</i>	Yarrow, western				N	Erect	6-24	Low	Medium	8-60		x	x
<i>Chaenactis douglasii</i>	Dustymaiden, Douglas'				N	Erect	12-36	Medium	Short	9-15		x	x
<i>Helianthus petiolaris</i>	Sunflower, prairie				N	Erect	10-36	Medium	Annual	9-18			x
<i>Melilotus alba</i>	Sweetclover, white				I	Erect	12-36	Med.-Rapid	Short	9-18	x	x	x
<i>Melilotus officinalis</i>	Sweetclover, yellow				I	Erect	12-36	Med.-Rapid	Short	9-18	x	x	x
<i>Balsamorhiza hookeri</i>	Balsamroot, Hooker's				N	Erect	12-24	Medium	Medium	9-20	x	x	x
<i>Penstemon angustifolius</i>	Penstemon, broadleaf				N	Erect	24-36	V. Low	Short	9-35		x	x

Plants for Pollinators in the Intermountain West























TABLE 2 (cont). FORB AND LEGUME CHARACTERISTICS LISTED BY PRECIPITATION REQUIREMENTS													
Latin Name	Common Name	Bloom Time and Color			Origin	Character	Height (in)	Seedling Vigor	Longevity	Precip. Range (in)	Soils		
		Early	Mid.	Late							Fine	Med.	Coarse
<i>Vicia americana</i>	Vetch, American				N	Spreading	6-12	Low	Medium	9-50	x	x	
<i>Aster glaucodes</i>	Aster, gray				N	Erect	20-30	Low	Short	10-18	x	x	
<i>Dalea candida</i>	Prairie clover, white				N	Erect	24-36	Med.	**	10-18	x	x	
<i>Penstemon eatonii</i>	Penstemon, firecracker				N	Erect	12-30	V. Low	Short	10-18	x	x	
<i>Phacelia hastata</i>	Phacelia, silverleaf				N	Decumbent	18-24	Medium	Medium	10-18	x	x	
<i>Tradescantia occidentalis</i>	Spiderwort, prairie				N	Erect	12-16	**	**	10-18		x	
<i>Linum lewisii</i> *	Flax, Lewis				N	Erect	12-24	Low-Med.	Short	10-20	x	x	
<i>Linum perenne</i> *	Flax, blue				I	Erect	12-24	Low-Med.	Short	10-20	x	x	
<i>Verbesina encelioides</i>	Crownbeard, golden				N	Erect	16-30	Medium	**	10-20	x	x	
<i>Medicago sativa ssp. falcata</i>	Alfalfa, yellow blossom				I	Erect	24-36	Medium	Medium	10-25	x	x	
<i>Heterotheca villosa</i>	Goldenaster, hairy false				N	Rounded	12-18	Medium	Short	10-26	x	x	
<i>Anaphilis margaritacea</i>	Pearly everlasting, western				N	Erect	24-36	Medium	Short	10-35		x	
<i>Lupinus argenteus</i>	Lupine, silver				N	Erect	18-24	High	Short	10-45	x	x x	
<i>Potentilla arguta</i>	Cinquefoil, tall				N	Erect	24-36	V. Low	Short	10-50		x	
<i>Crepis occidentalis</i>	Hawksbeard, largeflower				N	Erect	10-30	Low	Long	12-18	x	x x	
<i>Hedysarum boreale</i> *	Sweetvetch				N	Erect	12-24	Low	Medium	12-18	x	x x	
<i>Lomatium triternatum</i>	Biscuitroot, nineleaf				N	Erect	24-36	Medium	Long	12-20		x	
<i>Penstemon humilis</i>	Penstemon, low				N	Erect	6-14	**	**	12-20		x x	
<i>Penstemon linarioides</i>	Penstemon, toadflax				N	Erect	4-12	**	**	12-20			
<i>Penstemon pachyphyllus</i>	Penstemon, thickleaf				N	Erect	12-20	V. Low	**	12-20		x	
<i>Wyethia amplexicaulis</i>	Mule's ears				N	Erect	24-30	Low	Long	12-20	x	x	
<i>Agastache pallidiflora</i>	Hyssop, mountain giant				N	Erect	12-30	**	**	12-24	x	x x	
<i>Penstemon acuminatus</i>	Penstemon, sharpleaf				N	Erect	8-24	V. Low	Medium	12-30		x x	
<i>Helianthella uniflora</i>	Sunflower, oneflower				N	Erect	12-36	Medium	Medium	12-35		x x	
<i>Penstemon spectabilis</i>	Penstemon, showy				N	Erect	24-30	**	**	12-40		x x	

Plants for Pollinators in the Intermountain West

TABLE 2 (cont). FORB AND LEGUME CHARACTERISTICS LISTED BY PRECIPITATION REQUIREMENTS													
Latin Name	Common Name	Bloom Time and Color			Origin	Character	Height (in)	Seedling Vigor	Longevity	Precip. Range (in)	Soils		
		Early	Mid.	Late							Fine	Med.	Coarse
<i>Medicago sativa</i>	Alfalfa				I	Erect	24-36	Medium	Medium	12-65	x	x	
<i>Ipomopsis aggregate</i>	Gilia, scarlet				N	Erect	12-36	Low	Biennial	13-40		x	x
<i>Cleome serrulata</i>	Beeflower, Rocky Mountain				N	Erect	12-72	Med.-Rapid	Annual	13-55		x	x
<i>Balsamorhiza sagittata</i>	Balsamroot, arrowleaf				N	Erect	12-24	V. Low	Long	14-18		x	x
<i>Penstemon strictus</i>	Penstemon, Rocky Mountain				N	Erect	12-36	V. Low	Medium	14-26	x	x	
<i>Lomatium dissectum</i>	Biscuitroot, fernleaf				N	Erect	6-24	Medium	Long	14-30		x	
<i>Balsamorhiza macrophylla</i>	Balsamroot, cutleaf				N	Erect	12-24	V. Low	Long	14-40	x	x	x
<i>Echinacea purpurea*</i>	Coneflower, purple				N	Erect	6-24	Medium	Medium	14-40	x	x	x
<i>Onobrychis viciifolia*</i>	Sainfoin				I	Erect	24-60	Low-Med.	Medium	14-45		x	x
<i>Symphyotrichum ascendens</i>	Aster, western				N	Erect	12-40	Low	Medium	14-60		x	x
<i>Sanguisorba minor*</i>	Burnet, small				I	Erect	12-30	Medium	Medium	15-25	x	x	
<i>Geranium viscosissimum</i>	Geranium, sticky purple				N	Erect	24-36	Low	Short	16-20	x	x	
<i>Machaeranthera tanacetifolia</i>	Tansyaster, tansyleaf				N	Erect	24	Medium	Annual	16-24		x	
<i>Helioomeris multiflora</i>	Goldeneye, showy				N	Erect	8-39	Medium	Long	16-25		x	x
<i>Asclepias speciosa</i>	Milkweed, showy				N	Erect	36-48	Medium	Long	16-30		x	x
<i>Gaillardia aristata*</i>	Blanketflower				N	Erect	12-18	Medium	Short	16-30		x	x
<i>Ratibida columnifera*</i>	Coneflower, prairie or Mex hat				N	Erect	12-18	Medium	Medium	16-40	x	x	x
<i>Astragalus cicer</i>	Milkvetch, cicer				I	Erect	12-36	Low	Long	16-60	x	x	
<i>Solidago simplex/canadensis</i>	Goldenrod				N	Erect	24-40	Medium	Long	16-60	x	x	x
<i>Erigeron speciosus</i>	Fleabane, aspen				N	Erect	24-36	**	**	18-25		x	x
<i>Liatis punctata</i>	Blazingstar, dotted				N	Erect	24-32	Low	Short	18-26	x	x	x
<i>Phacelia sericea</i>	Phacelia, silky				N	Erect	12-18	**	**	18-30			
<i>Agastache urticifolia</i>	Hyssop, nettleleaf giant				N	Erect	30-36	Low	Long	18-36	x	x	x
<i>Penstemon rydbergii</i>	Penstemon, Rydberg's				N	Erect	24-36	Low	Medium	20-30	x	x	

Plants for Pollinators in the Intermountain West

TABLE 2 (cont). FORB AND LEGUME CHARACTERISTICS LISTED BY PRECIPITATION REQUIREMENTS

Latin Name	Common Name	Bloom Time and Color			Origin	Character	Height (in)	Seedling Vigor	Longevity	Precip. Range (in)	Soils		
		Early	Mid.	Late							Fine	Med.	Coarse
<i>Thermopsis montana</i>	Goldenbanner				N	Erect	24-30	Medium	**	20-30	x	x	
<i>Symphotrichum laeve</i>	Aster, smooth blue				N	Erect	36-48	**	**	20-35	x	x	
<i>Aquilegia caerulea</i>	Columbine, Colorado				N	Erect	12-24	Medium	Short	20-40		x	
<i>Lotus corniculatus</i>	Trefoil, birdfoot				I	Erect	18-36	Low	Long	20-45	x	x x	
<i>Trifolium fragiferum</i>	Clover, strawberry				I	Erect	6-14	Medium	Short	20-60		x	
<i>Monarda fistulosa</i>	Bee balm (wild bergamot)				N	Erect	36-48	Medium	Medium	20-60	x	x	
<i>Thermopsis montana</i>	Goldenbanner, mountain				N	Erect	24-30	Medium	**	24-30		x x	
<i>Iris missouriensis</i>	Blue-flag iris				N	Erect	24-35	High	Short	24-35	x	x x	
<i>Trifolium repens</i>	Clover, white				I	Prostrate	3-14	Medium	Short	24-70	x	x	
<i>Trifolium hybridum</i>	Clover, alsike				I	Erect	24-48	Medium	Short	25-60	x	x	
<i>Asclepias tuberosa</i>	Milkweed, butterfly				N	Erect	12-36	Low	Medium	28-45		x x	
<i>Lobelia cardinalis</i>	Cardinalflower				N	Erect	48-60	High	Medium	28-60		x	
<i>Rudbeckia hirta</i> *	Blackeyed Susan				N	Erect	9-12	Rapid	Short	28-65	x	x	

*Seed readily available and easily established

** Information not available

Plants for Pollinators in the Intermountain West

TABLE 3. FORB AND LEGUME SEEDING INFORMATION						
Latin Name	Common Name	Seeding depth	Seeds/lb	Drill lb/ac	Releases-recommended are underlined	Pollinators
<i>Achillea millefolium</i>	Yarrow, western	0-1/8	4,400,000	0.5	Eagle, Yakima, Great Northern	butterflies, some bees
<i>Agastache pallidiflora</i>	Hyssop, mountain giant	0-1/8	1,500,000	1	common	bees
<i>Agastache urticifolia</i>	Hyssop, nettleleaf giant	0-1/8	1,400,000	1	common	bees
<i>Anaphilis margaritacea</i>	Pearly everlasting, western	0-1/8	8,200,000	0.3	common	larval host plant of the Virginia lady (<i>Vanessa virginiensis</i>).
<i>Antennaria sp. (rosea)</i>	Pussytoes	0-1/8	6,600,000	0.3	common	painted lady butterfly
<i>Aquilegia caerulea</i>	Columbine, Colorado	0-1/8	400,000	3	common	hummingbirds
<i>Asclepias speciosa</i>	Milkweed, showy	1/8-1/2	72,000	15	common	butterflies; larval host of Monarch butterfly (<i>Danaus plexippus</i>)
<i>Asclepias tuberosa</i>	Milkweed, butterfly	1/8-1/2	70,000	15	common	butterflies
<i>Aster glaucodes</i>	Aster, gray	1/8-1/2	800,000	3	common	bees, butterflies
<i>Astragalus cicer</i>	Milkvetch, cicer	1/4-1/2	130,000	8	<u>'Lutana'</u> , <u>'Monarch'</u> , <u>'Windsor'</u>	bees
<i>Astragalus filipes</i>	Milkvetch, basalt	1/4-1/2	120,000	9	<u>'NBR-1'</u>	bees
<i>Balsamorhiza hookeri</i>	Balsamroot, Hooker's	0-1/4	55,000	18	common	bees
<i>Balsamorhiza macrophylla</i>	Balsamroot, cutleaf	0-1/4	55,000	18	common	bees
<i>Balsamorhiza sagittata</i>	Balsamroot, arrowleaf	0-1/4	55,000	18	common	bees, butterflies
<i>Castilleja spp.</i>	Paintbrush, Indian	Seedlings	N/A	N/A	common	hummingbirds, butterflies
<i>Chaenactis douglasii</i>	Dustymaiden, Douglas'	0-1/8	350,000	3	common	bees
<i>Cleome lutea</i>	Beeflower, yellow	0-1/4	101,000	11	common	bees, wasps, butterflies
<i>Cleome serrulata</i>	Beeflower, Rocky Mountain	0-1/8	64,000	17	common	bees, wasps, butterflies
<i>Crepis acuminata</i>	Hawksbeard, tapertip	1/4-1/2	800,000	3	common	bees
<i>Crepis occidentalis</i>	Hawksbeard, largeflower	1/4-1/2	105,000	10	common	bees
<i>Dalea candida</i>	Prairie clover, white	1/4-1/2	448,000	2	common	bees
<i>Echinacea purpurea</i>	Coneflower, purple	1/8-1/4	128,000	9	common	butterflies, bees
<i>Erigeron engelmannii</i>	Fleabane, Engelmann's	1/8-1/4	1,000,000	2	common	bees
<i>Erigeron pumilus</i>	Fleabane, shaggy	1/8-1/4	1,800,000	1	common	bees
<i>Erigeron speciosus</i>	Fleabane, aspen	1/8-1/4	1,900,000	1	common	bees, butterflies
<i>Gaillardia aristata</i>	Blanketflower	1/4-1/2	200,000	5	common	bees
<i>Geranium viscosissimum</i>	Geranium, sticky purple	1/4-1/2	55,000	20	common	bees, butterflies
<i>Hedysarum boreale</i>	Sweetvetch	1/4-1/2	46,000	24	<u>'Timp'</u>	bees, butterflies
<i>Helianthella uniflora</i>	Sunflower, oneflower	1/8-1/4	41,000	26	common	bees, ants
<i>Helianthus annuus</i>	Sunflower, annual	1/4-1/2	45,000	24	common	bees, ants
<i>Helianthus petiolaris</i>	Sunflower, prairie	1/8-1/4	120000	9	common	bees
<i>Heliomeris multiflora</i>	Goldeneye, showy	1/4-1/2	1,000,000	2	common	bees
<i>Heterotheca villosa</i>	Goldenaster, hairy false	1/8-1/4	726,000	3	common	bees

Plants for Pollinators in the Intermountain West

TABLE 3 (cont). FORB AND LEGUME SEEDING INFORMATION						
Latin Name	Common Name	Seeding depth	Seeds/lb	Drill lb/ac	Releases-recommended are underlined	Pollinators
<i>Ipomopsis aggregata</i>	Gilia, scarlet	0-1/8	360,000	3	common	hummingbirds, moths
<i>Iris missouriensis</i>	Iris, blue-flag	1/4-1/2	20,000	54	common	bees, bumblebees, butterflies
<i>Lathyrus pauciflorus</i>	Pea, fewflower	1/8-1/2	12,500	87	common	bees, butterfly larval host
<i>Liatris punctata</i>	Blazingstar, dotted	1/8-1/4	139,000	8	common	bees, butterflies
<i>Linum lewisii</i>	Flax, Lewis	0-1/8	260,000	4	<u>Maple Grove</u>	bees
<i>Linum perenne</i>	Flax, blue	0-1/8	278,000	4	<u>'Appar'</u>	bees
<i>Lobelia cardinalis</i>	Cardinalflower	0-1/8	11,000,000	0.2	common	hummingbirds
<i>Lomatium dissectum</i>	Biscuitroot, fernleaf	1/8-1/2	45,000	24	common	bees
<i>Lomatium macrocarpum</i>	Biscuitroot, bigseed	1/8-1/2	100,000	11	common	bees
<i>Lomatium triternatum</i>	Biscuitroot, nineleaf	1/8-1/2	45,000	24	common	bees
<i>Lotus corniculatus</i>	Trefoil, birdfoot	1/8-1/4	370,000	3	<u>'Norcen'</u> , <u>'Empire'</u> , <u>'Leo'</u> , <u>'Maitland'</u>	bees
<i>Lupinus argenteus</i>	Lupine, silver	1/4-1/2	15,500	70	common	bees, bumblebees
<i>Machaeranthera canescens</i>	Tansyaster, hoary	0-1/8	1,300,000	2	common	bees, butterflies
<i>Machaeranthera tanacetifolia</i>	Tansyaster, tansyleaf	0-1/8	400,000	3	common	bees, butterflies
<i>Medicago sativa</i>	Alfalfa	1/8-1/2	200,000	5	multiple, <u>Trevois</u> , <u>Rambler</u> , <u>Spreador</u> , <u>Ladak</u>	bees
<i>Medicago sativa falcata</i>	Alfalfa, yellow blossom	1/8-1/2	211,000	5	<u>'Don'</u> , <u>Yellowhead</u> , <u>SD201</u>	bees
<i>Melilotus alba</i>	Sweetclover, white	1/8-1/2	260,000	4	recommend 1 lb/ac standard in mixture	bees
<i>Melilotus officinalis</i>	Sweetclover, yellow	1/8-1/2	260,000	4	multiple	bees
<i>Monarda fistulosa</i>	Bee balm (wild bergamot)	0-1/8	1,300,000	2	common	bees, bumblebees
<i>Onobrychis viciifolia</i>	Sainfoin	1/4-3/4	32,400	34	<u>'Delaney'</u> , <u>Shoshone</u> , <u>'Eski'</u> , <u>'Melrose'</u> , <u>'Remont'</u>	bees
<i>Penstemon acuminatus</i>	Penstemon, sharpleaf	0-1/8	400,000	3	common	bees
<i>Penstemon angustifolius</i>	Penstemon, broadleaf	0-1/8	313,000	3	common	bees, hummingbirds
<i>Penstemon eatonii</i>	Penstemon, firecracker	0-1/8	315,000	3	<u>Richfield</u>	bees, wasps, hummingbirds
<i>Penstemon humilis</i>	Penstemon, low	0-1/8	952,000	2	common	bees
<i>Penstemon linarioides</i>	Penstemon, toadflax	0-1/8	1,000,000	2	common	bees
<i>Penstemon pachyphyllus</i>	Penstemon, thistleleaf	0-1/8	817,000	3	common	bees
<i>Penstemon palmeri</i>	Penstemon, Palmer's	0-1/8	294,000	4	<u>'Cedar'</u>	large bees
<i>Penstemon rydbergii</i>	Penstemon, Rydberg's	0-1/8	132,000	8	common	small bees
<i>Penstemon speciosus</i>	Penstemon, royal	0-1/8	400,000	3	common	bees, moths
<i>Penstemon spectabilis</i>	Penstemon, showy	0-1/8	750,000	3	common	bees, wasps, hummingbirds
<i>Penstemon strictus</i>	Penstemon, Rocky Mountain	0-1/8	286,000	4	<u>'Bandera'</u>	bees

Plants for Pollinators in the Intermountain West

TABLE 3 (cont). FORB AND LEGUME SEEDING INFORMATION						
Latin Name	Common Name	Seeding depth	Seeds/lb	Drill lb/ac	Releases-recommended are <u>underlined</u>	Pollinators
<i>Phacelia hastata</i>	Phacelia, silverleaf	1/8-1/4	450,000	2	common	bees
<i>Phacelia sericea</i>	Phacelia, silky	0-1/8	450,000	2	common	bees
<i>Potentilla arguta</i>	Cinquefoil, tall	0-1/8	4,400,000	0.5	common	bees
<i>Ratibida columnifera</i>	Coneflower, prairie or Mex hat	1/4-1/2	740,000	3	common	bees
<i>Rudbeckia hirta</i>	Blackeyed Susan	1/8-1/4	1,600,000	1	common	bees, butterflies
<i>Sanguisorba minor</i>	Burnet, small	1/4-1/2	42,000	26	<u>'Delar'</u>	bees
<i>Solidago simplex/canadensis</i>	Goldenrod	1/8-1/4	2,000,000	1	common	bees, beetles
<i>Sphaeralcea coccinea</i>	Globemallow, scarlet	1/4-1/2	500,000	2	common	bees
<i>Sphaeralcea grossulariifolia</i>	Globemallow, gooseberryleaf	1/4-1/2	500,000	2	common	bees
<i>Sphaeralcea parvifolia</i>	Small flower globemallow	1/4-1/2	500,000	2	common	bees
<i>Symphyotrichum ascendens</i>	Aster, western	0-1/4	2,000,000	1	common	bees
<i>Symphyotrichum laeve</i>	Aster, smooth blue	0-1/8	1,000,000	2	common	bees, butterflies
<i>Thermopsis montana</i>	Goldenbanner	1/4-1/2	30,600	36	common	bees, bumblebees
<i>Trifolium fragiferum</i>	Clover, strawberry	1/8-1/4	300,000	4	common	bees
<i>Trifolium hybridum</i>	Clover, alsike	1/8-1/4	680,000	3	common	bees
<i>Trifolium repens</i>	Clover, white	1/8-1/4	800,000	4	common	bees
<i>Vicia americana</i>	Vetch, American	1.0-2.0	33,000	33	common	bees
<i>Wyethia amplexicaulis</i>	Mule's ears	0-1/8	28,000	39	common	bees, bumblebees, butterflies

Plants for Pollinators in the Intermountain West

TABLE 4. GRASSES LISTED BY PRECIPITATION REQUIREMENTS

Latin Name	Common Name	Origin	Seeding Depth	Seeds/lb	drill lb/ac	Precip. Range (in)	Soils			Pollinator benefit
							Fine	Med	Coarse	
<i>Achnatherum hymenoides</i>	Ricegrass, Indian	N	1/2-3.0	162,000	8	6-14		x	x	Nesting habitat
<i>Aristida purpurea</i>	Three-awn, purple	N	1/2-1.0	250,000	4	6-14		x	x	Nesting habitat
<i>Achnatherum lettermanii</i>	Needlegrass, Letterman	N	1/4-1/2	150,000	6	6-18		x	x	Nesting habitat
<i>Pleuraphis jamesii</i>	Galletta, James'	N	1/4-1/2	270,000	4	6-18	x	x	x	Nesting habitat
<i>Sporobolus cryptandrus</i>	Dropseed, sand	N	0-1/4	5,300,000	1	7-12			x	Nesting habitat
<i>Hesperostipa comata</i>	Needle and Thread	N	1/2-3/4	115,000	6	7-16	x	x		Nesting habitat
<i>Poa secunda</i>	Bluegrass, Sandberg	N	0-1/4	1,000,000	2	8-12	x	x	x	Nesting habitat
<i>Elymus wawawaiensis</i>	Wheatgrass, Snake River	N	1/4-1/2	139,000	8	8-13		x	x	Nesting habitat
<i>Elymus elymoides</i>	Squirreltail, bottlebrush	N	1/4-1/2	220,000	6	8-15		x	x	Nesting habitat
<i>Elymus lanceolatus</i>	Wheatgrass, streambank and thickspike	N	1/4-1/2	135,000	8	8-16	x	x		Nesting habitat
<i>Leymus cinereus</i>	Wildrye, basin	N	1/4-3/4	130,000	8	8-18		x	x	Nesting habitat
<i>Poa ampla</i>	Bluegrass, big	N	0-1/4	925,000	2	9-18	x	x		Nesting habitat
<i>Elymus trachycaulus</i>	Wheatgrass, slender	N	1/2-3/4	135,000	8	10-18	x	x		Nesting habitat
<i>Sporobolus airoides</i>	Saccaton, alakali	N	0-1/4	1,700,000	1	10-18	x	x	x	Nesting habitat
<i>Pseudoroegneria spicata</i>	Wheatgrass, bluebunch	N	1/4-1/2	139,000	8	10-20	x	x		Nesting habitat
<i>Carex geyeri</i>	Sedge, elk	N	1/4-1/2	91,400	12	12-20		x	x	Documented larval host plant for <i>Oeneis jutta reducta</i> and <i>Oeneis chryxus</i>
<i>Elymus multisetus</i>	Squirreltail, big	N	1/4-1/2	192,000	6	12-20	x	x		Nesting habitat
<i>Boutelou gracilis</i>	Grama, blue	N	1/4-1/2	711,000	3	12-22	x	x	x	Nesting habitat
<i>Pascopyrum smithii</i>	Wheatgrass, western	N	1/4-1/2	115,000	8	12-36	x	x		Nesting habitat
<i>Elymus canadensis</i>	Wildrye, Canada	N	1/4-1/2	115,000	8	12-45	x	x	x	Nesting habitat
<i>Festuca idahoensis</i>	Fescue, Idaho	N	1/4-1/2	450,000	4	14-20	x	x		Nesting habitat
<i>Koeleria macrantha</i>	Junegrass, prairie	N	0-1/8	2,135,000	1	14-20		x	x	Nesting habitat
<i>Nassella viridula</i>	Needlegrass, green	N	1/4-1/2	180,000	6	14-24		x		Nesting habitat
<i>Bromus marginatus</i>	Brome, mountain	N	1/4-1/2	80,000	10	16-25	x	x	x	Nesting habitat
<i>Elymus glaucus</i>	Wildrye, blue	N	1/4-1/2	145,000	8	16-60	x	x		Nesting habitat

Plants for Pollinators in the Intermountain West

TABLE 5. TREES, SHRUBS AND HALF-SHRUBS LISTED BY PRECIPITATION REQUIREMENTS													
Latin Name	Common Name	Origin	Bloom time and color			Seeding depth	Seeds/lb	Drill lb/ac	Precip range (in)	Soils			Pollinators
			Early	Mid	Late					Fine	Med.	Coarse	
<i>Purshia glandulosa</i>	Bitterbrush, desert	N	☀			Seedlings	N/A	N/A	5-12	x	x	x	bees
<i>Purshia mexicana</i>	Cliffrose, Mexican	N	☀			Seedlings	N/A	N/A	6-12			x	bees
<i>Artemisia nova</i>	Sage, black	N			☀	0-1/4	950,000	2	6-18	x	x	x	habitat structure
<i>Krascheninikovia lanata</i>	Winterfat	N		☀	☀	0-1/8	123,000	2	7-12		x	x	habitat structure
<i>Chrysothamnus viscidiflorus</i>	Rabbitbrush, yellow (green)	N			☀	0-1/8 or Seedlings	782,000	0.25	7-15		x	x	butterflies
<i>Ericameria nauseosa</i>	Rabbitbrush, rubber	N			☀	0-1/8 or Seedlings	693,000	0.25	7-16	x	x	x	butterflies, small bees
<i>Yucca spp.</i>	Yucca (soapweed)	N	☀	☀		Seedlings	25,000	44	7-60		x	x	moths
<i>Poliomintha incana</i>	Mint, frosted	N	☀	☀	☀	Seedlings	N/A	N/A	8-12			x	bees
<i>Artemisia tridentata ssp. wyomingensis</i>	Sagebrush, Wyoming big	N			☀	0-1/8	1,700,000	0.5	8-13	x	x	x	habitat structure
<i>Atriplex canescens</i>	Saltbush, fourwing	N			☀	1/4-3/4	52,000	2	8-16		x	x	habitat structure
<i>Rhus trilobata</i>	Sumac, skunkbush	N	☀			Seedlings	N/A	N/A	8-18		x	x	bees
<i>Fallugia paradoxa</i>	Apache plume	N	☀	☀		Seedlings	N/A	N/A	8-20		x	x	bees and butterflies
<i>Artemisia tridentata ssp. tridentata</i>	Sagebrush, basin big	N			☀	0-1/8	1,700,000	0.5	9-15		x	x	habitat structure
<i>Forestiera neomexicana</i>	Stretchberry	N	☀			Seedlings	N/A	N/A	9-24	x	x	x	butterflies
<i>Baccharis salicifolia</i>	Mule-fat	N	☀	☀		Cuttings	N/A	N/A	10-15	x	x	x	butterflies
<i>Purshia tridentata</i>	Bitterbrush, antelope	N	☀			Seedlings	N/A	N/A	10-15		x	x	bees, butterflies
<i>Opuntia spp.</i>	Cactus, prickly pear	N	☀	☀		0-1/8	145,000	8	10-20	x	x	x	bees, beetles
<i>Holodiscus dumosus</i>	Spiraea, rock	N		☀	☀	Seedlings	N/A	N/A	10-35		x	x	various insects
<i>Artemisia frigida</i>	Sage, fringed	N			☀	0-1/8	4,500,000	0.5	10-40	x	x	x	habitat structure
<i>Ribes aureum</i>	Currant, golden	N	☀			Seedlings	N/A	N/A	12-18		x		bees, bumblebees
<i>Amelanchier utahensis</i>	Serviceberry, Utah	N	☀	☀		Seedlings	N/A	N/A	12-20		x	x	Larval butterfly host plant of the weidemeyer's admiral (<i>Limenitis weidemeyeri</i>) and the lorquin's admiral (<i>L. lorquini</i>).
<i>Philadelphus microphyllus</i>	Mockorange, littleleaf	N	☀			Seedlings	N/A	N/A	12-20		x	x	bees
<i>Shepherdia argentea</i>	Buffaloberry, silver	N		☀		Seedlings	N/A	N/A	12-20		x		bees, butterflies

Plants for Pollinators in the Intermountain West

TABLE 5 (cont). TREES, SHRUBS AND HALF-SHRUBS LISTED BY PRECIPITATION REQUIREMENTS													
Latin Name	Common Name	Origin	Bloom time and color			Seeding depth	Seeds/lb	Drill lb/ac	Precip range (in)	Soils			Pollinators
			Early	Mid	Late					Fine	Med.	Coarse	
<i>Eriogonum heracleoides</i>	Buckwheat, parsnipflower	N		☼		0-1/8	170,000	6 or plants	12-25	x	x		bees, butterflies
<i>Eriogonum umbellatum</i>	Buckwheat, sulphurflower	N		☼		0-1/4	209,000	4 or plants	12-25	x	x		bees, butterflies
<i>Rosa woodsii</i>	Rose, Woods'	N		☼		Seedlings	N/A	N/A	12-40	x	x		bees
<i>Cornus sericea</i>	Dogwood, redosier	N	☼	☼		Seedlings or cuttings	N/A	N/A	12-60	x	x		bees, butterflies
<i>Ribes cereum</i>	Currant, wax	N		☼		Seedlings	N/A	N/A	13-35	x	x		bees
<i>Arctostaphylos patula</i>	Manzanita, greenleaf	N	☼	☼		Seedlings	N/A	N/A	13-60	x	x		bees
<i>Amelanchier alnifolia</i>	Serviceberry	N	☼	☼		Seedlings	N/A	N/A	14-30		x		bees, butterflies
<i>Lonicera involucrata</i>	Honeysuckle, twinberry	N	☼	☼		Seedlings	N/A	N/A	14-32	x	x		butterflies, bees, hummingbirds
<i>Symphoricarpos oreophilus</i>	Snowberry	N	☼	☼		Seedlings	N/A	N/A	14-45	x	x		bees, butterflies, hummingbirds
<i>Chamaebatiaria millefolium</i>	Fern bush, Desert sweet	N		☼	☼	0-1/8 or seedlings	144,000	8	15-60	x	x		bees
<i>Artemisia tridentata ssp. vaseyana</i>	Sagebrush, mountain big	N			☼	0-1/8	1,700,000	0.5	16-25	x	x		habitat structure
<i>Ceanothus velutinus</i>	Ceanothus, snowbrush	N	☼	☼		Seedlings	N/A	N/A	16-40	x	x		butterflies
<i>Crataegus douglasii</i>	Hawthorn, black	N	☼	☼		Seedlings	N/A	N/A	16-60	x	x		moths, bees, butterflies
<i>Prunus virginiana</i>	Chokecherry	N	☼			Seedlings	N/A	N/A	16-60		x		bees, butterflies
<i>Solidago spp.</i>	Goldenrod	N			☼	1/8-1/4 or seedlings	4,600,000	0.5	16-60	x	x	x	bees, wasps, beetles
<i>Holodiscus discolor</i>	Oceanspray	N	☼	☼	☼	Seedlings	N/A	N/A	18-24	x	x	x	various insects
<i>Dasiphora fruticosa</i>	Cinquefoil, shrubby	N	☼	☼		Seedlings	N/A	N/A	18-25		x		moths, bees, butterflies
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	N	☼	☼		Seedlings	N/A	N/A	18-45	x	x		butterflies, hummingbirds
<i>Prunus americana</i>	Plum, American	S	☼			Seedlings	N/A	N/A	20-40		x	x	bees, butterflies
<i>Salix spp.</i>	Willow	N	☼			Cuttings	N/A	N/A	20-60	x	x	x	bees, butterflies

REFERENCES

- Dreesen, D.R. and T.R. Grasswitz. 2012. Preliminary Pollinator Plant Recommendations for New Mexico USDA, NRCS, Los Lunas, NM. Plant Materials Technical Note No. 71, Albuquerque, NM. February 2012. 11p.
- Mader, E. Shepherd, M., Vaughan, M. Hoffman Black, S., and G. LeBuhn. 2011. Attracting Native Pollinators. Storey Publishing. North Adams, MA. 371p.
- Majerus, M., Reynolds, C. Scianna, J., Winslow, S., and L. Holzworth. 2001. Creating Native Landscapes in the Northern Great Plains and Rocky Mountains. USDA, NRCS, Bridger, MT. 16p.
- Ogle, D.G., Cane, J., Fink, R., St. John, L., Stannard, M., and T. Dring. 2009. Plants for Pollinators in the Intermountain West. USDA, NRCS, Boise, ID. Plant Materials Technical Note No. 2A. 21p.
- Ogle, D., St. John, L., and C. Stange. 2010. Tree Planting, Care and Management. USDA, NRCS, Boise, ID. Plant Materials Technical Note No. 43. 32p.
- Ogle, D. G., L. St. John, and M. Stannard. 2010. Grass, Grass-like, Forb, Legume, and Woody Species for the Intermountain West. USDA, NRCS, Boise, ID. Plant Materials Technical Note No 24: 48p.
- Pavek, P., Ogle, D., Cane, J., St. John, L., Stannard, M., Dring, T., and R. Fleenor. 2011. Plants for Pollinators in the Inland West. USDA, NRCS, Boise, ID. Plant Materials Technical Note No. 2B. 31p.
- Selland, L.G. 2003. Landscaping with Native Plants of the Intermountain Region. USDI, BLM, Technical Reference 1730-3. Boise, ID. 47p.
- Taliga, C. 2011. Plant Suitability and Seeding Rates for Conservation Plantings in Colorado. USDA, NRCS, Denver, CO. Plant Materials Technical Note No. 59. 35p.
- USDA-NRCS Tucson Plant Materials Center and The Xerces Society. 2012. Plants for Enhancing Pollinator Habitat in Arizona. USDA, NRCS, Tucson, AZ. Plant Materials Technical Note No 12-1: 15p.
- Vaughn, M., and S.H. Black. 2006. Improving Forage for Native Bee Crop Pollinators. USDA, NRCS and FS, Agroforestry Note No. 33. Lincoln, NE. 4p.
- Vaughn, M., and S.H. Black. 2007. Pesticide Considerations for Native Bees in Agroforestry. USDA, NRCS and FS, Agroforestry Note No. 35. Lincoln, NE. 4p.

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers, employees, and applicants for employment on the bases of race, color, national origin, age, disability, sex, gender identity, religion, reprisal, and where applicable, political beliefs, marital status, familial or parental status, sexual orientation, or all or part of an individual's income is derived from any public assistance program, or protected genetic information in employment or in any program or activity conducted or funded by the Department. (Not all prohibited bases will apply to all programs and/or employment activities).