

Plant for Pollinators

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POLLINATORS DEFINED

- Pollinators are animal species that provide pollination services to plants in natural and wild landscapes, cultivated gardens and agricultural settings around the world.
- They have co-evolved with plants, and the relationship between plants and pollinators is very intricate, each relying on each other for survival.
- These important services help many plants complete their lifecycles, as well as ensuring food and shelter for humans and other animals for many generations.
- Pollinators visit flowers to collect nectar and pollen which provides nutrition for their offspring.
- More than 70% of flowering plants in the world rely on pollinators for fruit and seed production.
- A pollinator-friendly yard not only provides nectar and pollen for the pollinators, but also nesting sites and/or host plants on which pollinators can lay their eggs. When the eggs hatch, the leaves of the host plant are instant food.

IS IT A POLLINATOR, OR A VISITOR?

- Pollinators include bees, wasps, beetles, flies, moths, butterflies, hummingbirds, and bats.
- Just because an insect or a bird is visiting a flower, it is not necessarily a pollinator.
- Pollinators move between flowers of the same plant species in an orderly fashion, whereas flower visitors move haphazardly among flowers, spending very little time within a flower.
- Even if it does happen that a flower visitor gathers pollen grains on its body, it will not necessarily move to the same flower species, and pollination would not occur.

HOW POLLINATION HAPPENS

- When a pollinator enters a flower, pollen grains from that flower stick to its body.
- The pollinator then moves to another flower on the same plant or a different plant, but of the same species. This leads to the transfer of pollen from its body to the next flower resulting in cross-pollination.
- Pollination is essential for plant reproduction – the production of fruits and seeds.
- It is important to note that not all plants rely on pollinators, some are wind pollinated such as most of our grains: wheat, rice, corn, barley, oats, etc.

WHAT IS POLLINATOR HABITAT?

- Just like humans and other animals, pollinators need food, water, shelter and space to support robust populations.
- Pollinator habitat is an area with a variety of flowering plants that provide food and nesting space. The habitat may be a natural setting such as a prairie or a meadow, or it could be man-made, where a combination of flowering plants are cultivated specifically to provide nutrition and nesting space for pollinators.
- Man-made pollinator habitats can be found in a variety of settings, both large and small.

- Some gardens, such as botanical gardens, may be a collection of plants used for conservation and display purposes and in other cases, gardens may be places where new varieties of flowering plants are being evaluated.
- These, along with home gardens, can serve as pollinator habitat.
- In most cases, when there are several flowering plants all in bloom, pollinators will be attracted to them.
- If a habitat is intentionally planted to provide nutrition for pollinators, then it needs to contain a mixture of plant species so that bloom times range from early spring to late fall.
- This ensures that flowers will be available throughout the pollinator activity season.
- Home gardens, parks, community gardens, prairies and meadows can all provide pollen and nectar.
- These habitats can be refuges for pollinators foraging through lawns and farmlands that may not have the floral resources they need.

CREATING A POLLINATOR HABITAT

- You can design a garden that is both beautiful for you and provides habitat (food, water and shelter) for pollinators.
- An important factor to consider when planning a habitat garden is what type of pollinator you are designing it for.
- Providing plants that bloom early in the season until late is important for all pollinators, but you should also consider what type of flowers and potential nesting sites are needed to make the garden attractive to different species.
- For instance, bees prefer a broad range of plants, some of which may provide pollen only, while others provide pollen and nectar.
- Flower size also matters. Some native bees are quite large and prefer size appropriate flowers. Smaller bees will be able to work smaller flowers more effectively.
- When planting for pollinators it is important to consider the structure of the flowers too. Different species may be more or less inclined to visit a bell shaped flower over a flat disk shaped flower and vice versa.
- Bees like to focus on flowers of similar structure, so grouping flowers of similar structure together while designing the landscape will work in sync with their preferences.
- It is best to plant in layers, replicating nature.
- Begin by establishing a basic structure with trees and shrubs. Then add perennials, grasses, and groundcovers as further layers within the landscape.

Early Season

Common Yarrow (*Achillea millefolium*)

- Among flowering plants you will find few that are as tough as common yarrow. This plant tolerates drought and often appears in inhospitable disturbed sites. NATIVE
- Yarrow foliage is finely divided and bright green with a fern-like appearance.
- White or pink flat topped flower clusters (late spring – summer) are held above the foliage. The blooms are attractive to butterflies, bees and parasitic wasps.
- Mature height and spread 2' to 3'. Zone 3
- Full sun; deer resistant. Adaptable to most soil types. Max. Elev. 10,000 ft.



Nodding Onion (*Allium cernuum*)

- This tiny bulb has narrow grass-like leaves. The flowers tower above the foliage in an umbrella shaped cluster of starry pink pendant flowers during summer. NATIVE
- Flowers attract hummingbirds, butterflies, native bees and honeybees. Insects that nectar here must be able to hang upside down.
- Plants usually go dormant in summer and leaves disappear until cool weather returns.
- Due to the oniony flavor and scent, plants are unappealing to deer and other herbivores.
- Mature height 1' to 2' and spread 1'. Zone 4
- Full sun to partial shade; Max. Elev. 10,000 ft.



Saskatoon Serviceberry (*Amelanchier alnifolia*)

- This multi-stemmed shrub has showy white flowers in compact clusters which appear in April before the leaves. Fall color ranges from mostly yellow to orange. NATIVE
- Small, round, edible berries ripen to dark purplish-black in June and resemble blueberries in size, color and taste.
- Berries may be eaten fresh off the plant or used in jams, jellies and pies.
- Mature height 10', spread 8'. Zone 2
- Full sun to part shade; adaptable to a wide range of soil types. Max. Elev. 10,000 ft.



Winecups (*Callirhoe involucrata*)

- Commonly known as Poppy Mallow, this plant decorates the garden with a summer-long display of bright magenta-pink flowers. A 1999 Plant Select introduction. NATIVE
- The long spreading stems make this plant useful on slopes or cascading over retaining walls. Great for hot south or west facing beds.
- It goes completely dormant and loses all of the previous year's growth. It reseeds itself and will slowly spread if you let it.
- Mature height 5", spread 3'. Zone 4
- Full sun; deer resistant. Adaptable to a wide range of soil types. Max. Elev. 10,000 ft.



Sulphur Flower (*Eriogonum umbellatum*)

- This spreading, mat-forming perennial is noted for its tiny sulphur yellow flowers, which bloom from late spring into summer atop leafless flowering stalks rising to 12" tall. NATIVE
- Also known as Sulphur Buckwheat, flowers emerge sulphur yellow to cream, but age to an orange-yellow.
- Extremely tolerant of heat and cold.
- Mature height 5" to 12", spread 3'. Zone 4
- Full sun; deer resistant. Flowers are attractive to a large number of butterflies and bees. Max. Elev. 12,000 ft.



Wallflower (*Erysimum* spp.)

- This genus contains over 260 annual, biennial and semi-evergreen or evergreen perennials and subshrubs. NATIVE
- All are grown for their attractive flowers; perennials in this genus are generally short-lived and treated as biennial plants.
- Flowers tend to be scented, and come in a wide range of warm colors including pink, red, orange, yellow, purple and bicolors.
- Mature height and spread 1' to 3'. Zone 5



- Full sun; deer resistant. Prefers poor to moderately fertile, well-drained, alkaline soils. Max. Elev. 11,500 ft.

Prairie Smoke (*Geum triflorum*)

- A very distinctive prairie plant, Prairie Smoke features purple to reddish-pink, nodding bowl-shaped flowers in late spring. NATIVE
- Blooms are followed by elongated seed heads that form upright, silvery-pink tails up to 2" long. They resemble plumes of smoke.
- Blue-green fern-like foliage turns deep red in fall. Mature height and spread 6" to 1'. Zone 3
- Full sun; deer resistant. Makes a great groundcover. Max. Elev. 11,500 ft.



Blue Flax (*Linum lewisii*)

- This drought tolerant wildflower is often a component of wildflower mixes. It is a short lived perennial that provides color for at least two years. It often self-sows. NATIVE
- Blue Flax bears loose clusters of large sky-blue flowers all summer long.
- The flowers, funnel-shaped when they open in the morning, flatten as the day progresses and are dropped the following day leaving a spherical, green seed capsule.
- Mature height and spread 1' to 2'. Zone 5
- Full sun to partial shade; attractive to a wide range of bees and flies. Max. Elev. 8,000 ft.



Penstemons (*Penstemon* spp.)

- With hundreds of Penstemon species to choose from, finding beautiful plants is easy. NATIVE
- From dwarf groundcovers to tall shrub-like plants, Penstemons are a very diverse genus.
- These plants generally have tall loose spikes of small flowers above small or thin leaves.
- Bloom periods range from May-June to all spring and summer long. They love hot, sunny, dry growing conditions.
- Mature height 6" to 30", spread 12" to 24". Zone 3
- Full sun; deer resistant. Max. Elev. 7,500 to 11,000 ft.



Pasque Flower (*Pulsatilla patens*)

- This clump forming perennial has erect, bell-shaped, solitary blue to purple to white flowers on short stems in early spring. NATIVE
- They are followed by ornamental, plume-like seed heads (resembling those of clematis) in fluffy, spherical clusters.
- The ferny, silky basal foliage is attractive throughout the growing season.
- Mature height 3" to 12", spread 3" to 6". Zone 3
- Full sun. Max. Elev. 7,500 to 11,000 ft.

Flowering Fruit Trees (*Malus* spp. and *Prunus* spp.)

- The flowers of many fruit trees are a critical source of forage for bees, providing nutrient-rich pollen and nectar that bees use for food and to make honey.
- Many types of trees including plums, apples, crabapples, peaches, apricots, cherries and pears are good food sources for bees.
- Some varieties are available in fruiting and fruitless types.
- Many fruiting varieties need bees to produce fruit. Most of these will flower in the spring.

Mid-Season

Lead Plant (*Amorpha canescens*)

- A small native shrub that typically occurs in open woodlands and prairies. NATIVE
- Showy 3" to 4" flower spikes of dense, tiny bluish-purple flowers in June and July.
- Open growth habit with arching stems and gray-green fuzzy fern-like foliage.
- The common name refers to the once held belief that the plant was an indicator of lead in the ground.
- Mature height and spread 2' to 4'. Zone 3
- Full sun; deer resistant. May die back to the ground in winter, but will regrow in the spring. Max. Elev. 8,000 ft.



Pearly Everlasting (*Anaphalis margaritacea*)

- This is an upright, clump-forming plant that features narrow, woolly, silver-gray foliage and tiny, white, globular flowers (July – September) with yellow centers. NATIVE
- Clustered at the top of erect stems, the tiny yellow flowers are enclosed by white papery bracts, often mistaken for petals. The overall appearance is a pearly mound.
- This plant is the larval host of the American Painted Lady Butterfly. The fluffy flower heads are used in dried flower arrangements.
- Mature height and spread 1' to 3'. Zone 3
- Full sun; deer resistant. Max. Elev. 8,500 ft.



Showy Milkweed (*Asclepias speciosa*)

- Showy Milkweed is similar to Common Milkweed, but its pinkish-purple flowers have longer petals that taper more. NATIVE
- Easily grown from seed, and may self-seed in the landscape if seed pods are not removed prior to splitting open. Once established, it is best to leave plants undisturbed because they develop deep taproots which make transplanting difficult.
- Asclepias are excellent nectar sources and are food for the larval stages of Monarch and Queen butterflies.
- Mature height 1' to 3'; spread 12" to 18". Zone 3
- Full sun; deer resistant. Max. Elev. 7,500 ft.



Harebells (*Campanula rotundifolia*)

- This plant is native to the temperate Northern Hemisphere. It blooms June-September with blue-violet bell-shaped flowers. NATIVE
- Harebell relates to the fact that this plant is sometimes found in areas inhabited by rabbits (hares). In Scotland it is popularly known as the Bluebells of Scotland.
- They appreciate morning sun, part afternoon shade. Plants need regular and even moisture. Deadhead spent flowers to encourage additional bloom.
- Mature height and spread 12". Zone 3
- Full sun; Max. Elev. 10,000 ft.



Blanket Flower (*Gaillardia aristata*)

- A member of the sunflower family, Blanket Flower is widespread across most of North America. NATIVE
- Daisy-like flowers are produced from early summer to fall in shades of red, orange, yellow and peach.
- The petals of some varieties are frilled, while others have a unique, tubular shape.
- Prefers a loose, sandy well-drained, low fertility soil. Deadhead to keep them blooming.
- Mature height and spread 12" to 24". Zone 3
- Full sun; deer resistant. Max. Elev. 8,500 ft.



Salvia (*Salvia* spp.)

- Salvia is commonly referred to as sage and is the largest genus of plants in the mint family, with nearly 1000 species of shrubs, annuals and perennials.
- Salvias have many small bright colored flowers that bloom in the summer and fall.
- Butterflies and hummingbirds love the nectar of these small flowers.
- This is a true must-have for all butterfly gardens; you will be amazed at the popularity of these flowers.
- Mature height and spread 1' to 3'. Zone 2
- Full sun; deer resistant. Max. Elev. 8,500 ft.



Late-Season

Blue Giant Hyssop (*Agastache foeniculum*)

- This Agastache, commonly known as anise hyssop, is an upright, clump-forming perennial of the mint family. NATIVE
- It is noted for its mid- to late summer bloom of lavender to purple flowers in terminal spikes and its anise-scented foliage.
- Flowers are attractive to bees, hummingbirds and butterflies. Aromatic leaves can be used to make herbal teas or jellies. Dried leaves can be added to potpourris.
- Mature height 2' to 4' and spread 1.5' to 3'. Zone 4
- Full sun. Max. Elev. 8,000 ft.



Fernbush (*Chamaebatiara millefolium*)

- A 2006 Plant Select introduction. This little known shrub makes a great specimen or hedge. NATIVE
- Showy flower spikes in mid-summer resemble those of lilacs from a distance, but close up resemble a single rose.
- Foliage has a fern-like appearance with a greenish-gray color.
- A great plant for enhancing the garden's habitat value as the flowers are highly attractive to native bees.
- Mature height and spread 4' to 5'. Zone 4
- Full sun; deer resistant. Max. Elev. 7,500 ft.



Rabbitbrush (*Chrysothamnus nauseosus*)

- Also known as Chamisa or Rubber Rabbitbrush, this shrub is typically found growing in sunny open areas with dry soils (sandy, gravelly or clay) in a variety of habitats. NATIVE
- It thrives in disturbed soils, and is often found growing with sagebrush.
- Twigs are covered with persistent, felt-like, white to gray hairs.
- Abundant yellow blooms cover the plant July – October.
- Mature height and spread 4'. Zone 2
- Full sun; deer resistant. Max. Elev. 9,500 ft.



Rocky Mountain Bee Plant (*Cleome serrulata*)

- This plant blooms July and August with large showy flowers in shades of pink and rose pink, and is an annual plant - but it will re-seed. NATIVE
- The pink flowers attract bees and butterflies, and the seeds are important food for doves and other small birds.
- It's traditionally been used by native peoples as a source for dyes, edible leaves and medicinal preparations. Other common names include Cleome and Spider Flower.
- Mature height and spread 4'. Zone 2
- Full sun. Max. Elev. 9,500 ft.

Plains Coreopsis (*Coreopsis tinctoria*)

- An annual coreopsis that is native to the western U.S., it is commonly cultivated in gardens as an annual. NATIVE
- During the blooming period (June – September), it produces showy flower heads in abundance.
- The flowers provide nectar and pollen to a wide variety of insects, including bees, wasps, flies, butterflies, skippers, and beetles.
- Typically available from seed, it brings color in the first season, but often will reseed itself.
- Mature height 2' to 4' and spread 1.5'. Zone 2
- Full sun; deer resistant. Max. Elev. 7,000 ft.



Common Sunflower (*Helianthus annuus*)

- Native to dry plains, prairies, meadows and foothills in the western U.S., Canada and northern Mexico. NATIVE
- Plant seed in the garden after the last frost date. Taller varieties should be sited in locations sheltered from strong winds.
- In summer, flowers up to 12" across are produced. Flowers are attractive to bees, seeds are favored by birds.
- Mature height 3' to 10'; spread 1.5' to 3'. Zone 2
- Full sun; deer resistant. Max. Elev. 7,000 ft.



Hairy False Sunflower (*Heterotheca villosa*)

- This perennial is abundant not only in the foothills and mountains, but also in vacant lots, farmyards, and along roadsides. NATIVE
- It needs little water, often blooms for three or four months (June–October) and seeds itself readily (it also spreads from roots). Attractive to butterflies.
- Stems are topped by clusters of bright yellow flowers about one inch in diameter.
- Mature height and spread 6" to 20". Zone 2
- Full sun; deer resistant. Max. Elev. 10,500 ft.



Goldenrod (*Solidago* spp.)

- There are about 120 different species of goldenrod and most of them are native to the United States. NATIVE
- Goldenrod is common to prairies, grasslands, roadsides, and can even be found growing in forests.
- It produces a chemical at the roots that discourages the growth of other plants nearby. This process is called allelopathy.
- Goldenrod is a food source for bees, butterflies, flies, wasps, birds, and small mammals.
- Mature height and spread 6" to 5'. Zone 2
- Full sun; deer resistant. Max. Elev. 13,000 ft.



Chokecherry (*Prunus virginiana*)

- Chokecherry fruit is eaten by more than 70 bird species. Aggressive growth habit! Hardy to -50oF. NATIVE
- Showy flowers in spring are followed by the red-black fruit. Green summer leaves change to orange and red in the fall.
- Fruits are technically edible, but are astringent (hence the common name). Fruits can be harvested for processing into jams, jellies, pies and sauces.
- Mature height 25' and spread 20'. Zone 2
- Full sun. Max. Elev. 9,000 ft.

Boulder Raspberry (*Rubus deliciosus*)

- This shrub has an arching growth habit and exfoliating cinnamon-colored bark. NATIVE
- Large, showy, white single flowers appear in late spring.
- The flowers produce fuzzy, coarse and seedy raspberries that range in taste from tart to sweet.
- Berries are attractive to birds and other wildlife, but are generally considered unpalatable.
- Mature height 4' to 5', spread 5'. Zone 4
- Full sun to partial shade. Works great as an understory plant in dry shade; deer resistant. Max. Elev. 9,000 ft.



LOCATION OF THE GARDEN

- The location of the garden is extremely important. Most pollinators generally prefer sunny areas, and large connected habitats are better than small patchy ones.
- Before planting, determine if you can connect your front yard and your backyard through the use of flowering plants and plan accordingly.
- It is important to have a variety of flowering species planted as groups/swaths in the landscape rather than as single plants. This allows pollinators to work one area more efficiently, rather than having to move around to find plants of the same species.

CREATE HABITAT!

Remember that any habitat is better than no habitat. If done correctly, creating a beautiful garden for yourself and pollinators can have far reaching benefits that positively impact the greater ecosystem that surrounds you.

Some of the information provided courtesy of Colorado State University Extension

<https://extension.colostate.edu/>