



Bringing Wildlife Home

## Pollinator Gardening



Approximately 80% of all flowering plants depend on pollinators to help them reproduce.

More than 150 U.S. food crops depend on pollinators, including almost all fruit and grain crops. The USDA estimates that crops dependent on pollination are worth more than \$10 billion a year.

Pollinators are animals that move from plant to plant while searching for protein-rich pollen or high-energy nectar to eat. As they go, they are dusted by pollen and move it to the next flower, fertilizing the plant and allowing it to reproduce and form seeds, berries, fruits and other plant foods that form the foundation of the food chain for other species—including humans. Pollinators are themselves important food sources for other wildlife. Countless birds, mammals, reptiles and amphibians eat the protein and fat-rich eggs, larvae, or adult forms of pollinators, or feed them to their young. Pollinators play a critical role in the food supply for wildlife and people!

Bees are well-known pollinators, but over 100,000 invertebrates—including butterflies, moths, wasps, flies, and beetles—and over 1,000 mammals, birds, reptiles and amphibians, act as pollinators. Pollinators worldwide are in decline. Habitat loss, invasive species, parasites, and pesticides are largely to blame. But you can help! Here's how.

### Pollinator Gardens Tips

- Plant native flowering plants in your garden. These are the plants that pollinators evolved with and rely upon. Ecoregional guides for native plants can be downloaded at [www.pollinator.org/guides.htm](http://www.pollinator.org/guides.htm).
- Different pollinators are attracted to different plants. Pollinator syndrome guides ([www.fs.fed.us/wildflowers/pollinators/syndromes.shtml](http://www.fs.fed.us/wildflowers/pollinators/syndromes.shtml)) can help you select native plants for the specific pollinators you'd like to see in your garden.
- Some native wildflowers are not only great plants for pollinators, but they also are unappetizing to deer. Get a searchable database of deer-resistant native plants at [www.wildflower.org/collections/collection.php?collection=deer](http://www.wildflower.org/collections/collection.php?collection=deer).
- Provide water for pollinators by filling a shallow birdbath with gravel or creating a muddy patch in a corner of your yard.
- Most native bees are solitary and lay eggs in tiny tunnels in dead trees, fallen branches, hollow stems, or in sandy soil. Leave dead trees or fallen logs, create "bee condos" by drilling different sized holds in a block of untreated wood, or create open patches of soil for bees to use for nesting.

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- Butterflies need special “host plants” as food for their caterpillars. Planting host plants attracts more butterflies and allows them to successfully produce the next generation. Monarchs are in serious decline due to loss of their only host plant, milkweed, so planting it will help the species recover.
- Attract hummingbirds by planting dense shrubs for nesting and putting out a nectar feeder

### **Don't Use Pesticides.**

- Insects are a sign of a healthy garden, and an important food source for birds. No need to spray!
- Attract ladybugs, predatory wasps and other natural enemies of pests. Native plants attract beneficial pest predators.
- Hand-pick pests if you have an infestation or wash them off with a stream of water from a hose.
- If you must spray, only use organic or natural products or pest deterrents such as soap, garlic and chili pepper.
- Use products that target specific pests rather than broad-spectrum ones.
- Avoid anything labeled as toxic to bees or that kill the “weedy” flowers pollinators visit.
- Spray only at night, when flowers are not blooming, and when it's dry and windless.
- Carefully read and follow application instructions on any spray, using them sparingly.

### **Join the Garden for Wildlife Movement!**

Join the growing movement of people making a difference for wildlife where they live, work, learn, worship, and play! Just go to [www.nwf.org/garden](http://www.nwf.org/garden).

- Create a pollinator-friendly garden and have it recognized as a Certified Wildlife Habitat® in NWF's Garden for Wildlife® program.
- Turn your whole city or town into a pollinator haven through a Community Wildlife Habitat® project.
- Create a Schoolyard Habitat® to help pollinators and educate children about their importance.
- Create pollinator gardens at your office or your place of worship.
- Volunteer as a NWF Habitat Steward™ and help install pollinator-friendly wildlife gardens at your neighborhood schools and businesses.
- Spread the word! Tell friends, families, co-workers and neighbors how they can help pollinators.
- Many groups are working to protect pollinators and their habitats. Join NWF in supporting these efforts to protect pollinators, such as the Pollinator Partnership ([www.pollinator.org](http://www.pollinator.org)) and the Monarch Joint Venture (<http://www.monarchjointventure.org/>).



Visit [www.nwf.org/gardenforwildlife](http://www.nwf.org/gardenforwildlife) for more information.

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# A Guide to Seasonal Plantings of Mostly Native Flowering Plants and Shrubs That Support Pollinators and Birds

## Spring

### Flowers

#### **Aquilegia canadensis (Columbine)**

12-36", part shade. One of the earliest bloomers. Short-lived but reseeds. Red and purple flowers are important support for bees, butterflies, and hummers.

#### **Aroncus dioicus (Goat's Beard)**

36-60", part shade. Feathery white blossoms, elegant. Tiny seed pods in fall. Bees.

#### **Asclepias (Milkweed)**

12-24", sun. *A. incarnata* is pink, fragrant, and likes moist soils. Bloom period can extend into summer. *A. tuberosa* has mainly orange flowers and is more tolerant of dry areas. *A. syriaca*, also fragrant, also likes moist areas. Host plant for Monarch butterflies. Bees enjoy too.

#### **Dicentra (Bleeding Heart)**

12-18", shade. Needs moist soil. Delicate sprays of pink or white flowers, fern-like foliage, which may disappear in hot weather. Hummers.

#### **Mertensia virginica (Virginia Bluebells)**

18", shaded. Beautiful early blue flowers. Foliage disappears after bloom. Bees.

#### **Phlox divaricata (Woodland Phlox)**

12-15", shade. Prefers moist soil. Blue flowers in clusters. Spreads easily. Bees, butterflies, hummers.

#### **Tiarella cordifolia (Foam Flower)**

8-15", shade. Prefers moist soil. Delicate columnar, creamy little flowers. Early bloom. Native bees adore.

#### **Oenothera fruticose (Southern Sundrops, Narrowleaf Evening Primrose)**

12-24", sun. Likes moist soil. Yellow flowers, bloom period into early summer. Bees, butterflies, hummers.

### Shrubs

#### **Aesculus parviflora (Bottlebrush Buckeye)**

12-15', part-full shade. Deciduous, multistemmed shrub/small tree. Showy white flowers in bottlebrush shape. Bloom period extends into summer. Seeds in late summer. Butterflies, birds.

#### **Aesculus pavia (Red Buckeye)**

To 20', part shade. Deciduous shrub/small tree. Scarlet flowers. Bees, butterflies, hummers, other birds.

#### **Amelanchier Canadensis (Eastern Serviceberry)**

6-20', part shade. Deciduous, multistemmed shrub/small tree. Delicate white flowers in loose clusters. Blackish berries in summer. Bees, butterflies, birds. Beautiful fall color.

#### **Aronia melancarpa (Black Chokeberry)**

5-10', part sun-sun. Deciduous, small thicket in a few years. White flowers, black berries. Short, mounding specimen now available. Bees, birds.

#### **Callicarpa americana (Beautyberry)**

Up to 10', part sun-sun. Deciduous. Small pink flowers followed by stunning amethyst berry clusters. Cut to ground periodically to keep tidy. Flowers on new wood. A "nutritional powerhouse" for bees and 40 species of birds.

**Calycanthus floridus (Carolina Allspice, Sweetshrub)**

8-10', part shade-part sun. Deciduous. Burgundy, fleeting fragrance flowers. Thin large canes to ground periodically. C. Athens has yellow flowers. Bees.

**Ilex (Holly)**

Wide variety of sizes, part sun-sun. Shrub/large tree. Evergreen. Small white flowers, berries are orange-red, although I. Glaba has black berries. Most berries are emergency food source for birds in winter. Camellia scale disease can be a problem for some.

**Itea virginica (Sweetspire)**

3-5', shade-sun. Evergreen. Very fragrant white flowers. Forms colonies. Easy to maintain. Bees, butterflies adore. I. Little Henry is popular.

**Lindera benzoin (Spicebush)**

6-12', shade-part shade. Deciduous. Likes moist soil. Small yellow flowers on female plants. Good nectar source for butterflies and hummers. Berries for birds.

**Mahonia Aquifolium (Holly Leaf Oregon Grape)**

3-6', part shade. Evergreen. Clusters of yellow flowers are early blooms. Blue berries for birds.

**Myrica cerifera (Southern Bayberry)**

Up to 10', part shade-sun. Evergreen clump-forming shrub with flowers on female plants. Berries mature late summer—bird favorite. Native bees love the flowers.

**Physocarpus opulifolius (Ninebark)**

3-9', part sun-sun. Deciduous multistemmed shrub that exfoliates in nine layers. Ball-like white flowers. Bees.

**Rhus aromatica (Fragrant Sumac)**

1-6', part shade-part sun. Fragrant reddish-brown flowers. Colonizes into thickets. Bees, butterflies, and birds. Berries last into winter.

**Viburnum (Haw)**

Many sizes, part shade-part sun. Essential part of any nature garden. V. dentatum (Arrow-wood), 6-12' needs two different types to fruit. Masses of blue berries. V. nudum (Southern Wild Raisin) has berries that turn various colors before final blue. Berries for birds, bees ignore fragrant specimens.

**Summer**

**Flowers**

**Agastache (Anise Hyssop)**

24-36", sun. A star performer in any garden for pollinators. Highly attractive to bees and butterflies. Blooms June to November. Blue Boa and Blue Fortune are superior choices and faithfully return every year. Mexican Agastache have beautiful sunset colors but act like annuals in this region. Hummers enjoy them.

**Baptisia australis (False Blue Indigo, Wild Indigo)**

36-48", sun. Blue, purple blossoms atop pea-like foliage. Sturdy prairie flower. Settlers used flowers as substitute for true indigo to get blue dye.

## Shrubs

### **Buddleia davidii (Butterfly Bush)**

24-120", sun. Not a native, but bees and butterflies use, particularly as other flowers fade. Dwarf versions are useful for smaller spaces.

### **Ceanothus americana (New Jersey Tea)**

3-4', sun. Mounding low deciduous shrub. Tough, drought-tolerant. Small white, lilac-scented flowers in dense clusters. Bees, butterflies, hummers.

### **Cephalanthus occidentalis (Buttonbush)**

6-12', part shade-part sun. Deciduous. Absolutely needs moist soil. White flowers look like pincushions. Flower heads mature into ball-like fruits with tiny, two-seeded nutlets. Bees, butterflies, birds.

### **Clethera alnifolia (Summersweet)**

3-10', part sun-sun. Deciduous, very fragrant white flowers. Magnet for all pollinators. Dark-brown seed capsules attract birds in the fall.

### **Hamamelis virginiana (American Witch Hazel)**

8-30', shade-part shade. Shrub-small trees. Spidery yellow fragrant flowers can bloom into the fall. Definite understory plant. Bees.

### **Hydrangea quercifolia (Oak-Leaf Hydrangea)**

4-15', part shade-shade. Every garden needs some of these shrubs, which have multiseason interest. Its flower heads may be a foot long and persist in dried form on the bush, the bloom period is long, and the bark exfoliates. Bees, butterflies, and moths are attracted. Some pollinating insects can take shelter in the peeling bark.

## Fall

### Flowers

#### **Helianthus (Perennial Sunflower)**

72-96", sun. Smallish golden flowers on tall stalks. Bloom period starts in summer and goes into fall. *H. angustifolius* is particularly appealing to bees, butterflies, and birds.

#### **Helenium Autumnale (Sneezeweed)**

48-60", sun. Unfortunately named, the innocent late season flower is invaluable for bees, butterflies, and birds. Sturdy, survives in many different locales.

#### **Sedum (Stonecrop)**

Many sizes, sun. Not a native, but supports bees and butterflies in autumn. Autumn Joy and Neon are favorites of local bees.

#### **Solidago (Goldenrod)**

12-60", sun. A great American meadow flower. Its bloom period supports pollinators when little else is in bloom. Birds enjoy seedheads in the winter.

#### **Symphotrichm (Many Formerly Known as Asters)**

20-60", sun. Largely trouble-free with a very long bloom period of summer to frost. Dried seeds provide food to birds in the winter. *S. nova-angliae* is the sturdy beautiful New England "aster" that prefers somewhat moister areas. *S. oblongifolium* is the fragrant aster, and *Stokesia laevis* is the dazzling Stokes "aster." Many options available; try them all.

### **Caryopteris (Bluebeard)**

18-36", part-shade to part-sun. Not a native, but the blue-flowered late bloomer is a boon to bees and butterflies in late season. Paired with the nonnative Sedum, it offers a double treat to pollinators.

### **Planning Your Nature Garden**

Many hard-copy and online resources provide information about how to integrate a nature garden with a residence and other features of a property. The following tips relate to considerations for pollinators, birds, and other wildlife that will benefit from a move away from a typical urban or suburban yard with ample grass and a few exotic plants, featuring little of value to those creatures.

- Stop use of pesticides. In extreme circumstances, use very judiciously and avoid known pollinator devastating types. Cessation of mosquito sprays is **paramount**.
- Consider whether plantings in combination will provide food, shelter, and cover for wildlife. Offer pollen, nectar, and fruits (seeds) through multiple seasons. Leave the seed heads on many flowers for winter harvesting by birds, and let leaves and stalks remain until the spring.
- View the process as multiphased, starting with top-level decisions on trees, moving to shrubs, and finally filling in with plants.
- Understand the light, space, and moisture requirements of plants in relation to the available space for plantings. If possible, group plants with like moisture requirements to reduce wasting of water.
- Consider the plantings in connected layers and zones. The more integrated the plantings, the better the sanctuary effect.
- Plant multiples of pollinator plants; repetition attracts interest. Singleton plants might not get noticed by pollinators.
- Avoid the "living dead"—easy-to-find plants such as "knockout roses," gerbera daisies, nandina, bradford pears—that offer virtually nothing of value to wildlife and may actually be harmful. Crape myrtles are only builders' favorites.
- Plant native to the maximum extent possible.

### **Wildlife Friendly Trees**

Acer spp (Maple) Early blooms of red maples important for native bees

Carya (Hickory)

Celtis occidentalis (Hackberry)

Cercis canadensis (Redbud)

Chionathus florida (American Fringe Tree) Avoid the Chinese fringe tree  
Cornus florida (Dogwood) Appalachian Spring seems to be resistant to the deadly  
anthracnose that has killed almost all wild dogwoods  
Fagus grandiflora (Beech) Needs lots of space  
Fraxinus spp (Ash) Emerald ash borer is critical threat  
Halesia cardina (Silverbells)  
Juniperus virginiana (Eastern Red Cedar)  
Liquidambar styraciflua (Sweet Gum)  
Magnolia virginiana (Sweetbay Magnolia)  
Nyssa sylvatica (Black Gum)  
Oxydendron arboretum (Sourwood)  
Quercus spp (Oak) A critical tree  
Tilia americana (Linden)

### **Key Resources**

Native Plants of the Southeast, Larry Meelichamp, Timber Press, 2014. Information on  
460 species suited for this part of the country.  
Planting in a Post-Wild World, Thomas Ranier and Claudia West, Timber Press, 2016.  
Wildlife Gardening, Tips for Four Seasons, <https://www.shopnwf.org>  
Audobon Society  
National Wildlife Federation  
Xerces Society







Bringing Wildlife Home

## Create a Bird-friendly Habitat



Birding is the number one sport in America. Get started by observing birds in your own bird-friendly wildlife habitat.

For lists of bird species that may be helped by your bird-friendly habitat – whether it is urban, suburban, or rural – visit the website [audubonathome.org](http://audubonathome.org).

- **Provide water year-round** - A simple birdbath is a great start. Change water every 2-3 days in warm weather to prevent mosquito larvae from hatching and use a heater in the winter. Place the water container about 10 feet from dense shrubs or other cover that predators may use.
- **Install native plants** - Select a variety of native plants to offer year-round food in the form of seeds, berries, nuts, and nectar. Try to recreate the plant ecosystem native to your area. Evergreen trees and shrubs provide excellent cover through all seasons, if they are part of your local ecosystem. The Lady Bird Johnson Wildflower Center has lists of recommended native plants by region and state at [www.wildflower.org/collections](http://www.wildflower.org/collections).
- **Remove invasive plants from your wildlife habitat** - Many invasive plants out-compete the native species favored by birds, insects and other wildlife. To find a list of invasive plants in your state go to the USDA Plants Database at [plants.usda.gov/java/noxiousDriver](http://plants.usda.gov/java/noxiousDriver) (case-sensitive URL) or speak with your local Cooperative Extension Office, which you can find at [www.csrees.usda.gov/Extension/index.html](http://www.csrees.usda.gov/Extension/index.html).
- **Eliminate insecticides in your yard** - Insects are the primary source of food for many bird species and are an important source of protein and fats for growing juvenile birds.
- **Keep standing dead trees** - Standing dead trees (also known as 'snags') provide cavity-dwelling places for birds to raise young and a source of insects for food. Many species will also seek shelter from bad weather inside

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these hollowed out trees. Inspect your snags regularly to make sure they do not present any safety hazards.


- **Put out nesting boxes** - Make sure the boxes have ventilation holes near the top (but not in the roof, or water will leak in) and drainage holes below. Do not use a box with a perch, as house sparrows are known to sit on a nesting box perch and peck at other birds inside the nesting box. Be sure to monitor the boxes for invasive animal species such as European starlings or house sparrows, which are known to harm or outcompete native species.
- **Build a brush pile in a corner of your yard** - Start with larger logs and top with smaller branches. Some birds will hunt, roost or even nest in brush piles.
- **Offer food in feeders** - Bird feeders are great sources of supplemental food during times of food scarcity, and also enhance bird viewing opportunities.
- **Keep your cat indoors** - Domestic cats kill millions of birds every year.
- **Reduce your lawn area** - Lawns have little value to birds or other wildlife, and they require more energy for mowing, applying fertilizers and watering.
- **Observe and identify your bird visitors** - Find tips about birding and how to identify the birds in your habitat at [www.birds.cornell.edu/AllAboutBirds/birding123](http://www.birds.cornell.edu/AllAboutBirds/birding123).



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