



Pollinator Habitat Certification

from Penn State Extension Master Gardeners



Eastern forest sedge-sitter on New England aster. © 2024, Angela Hartley.

Learning Objectives

In this presentation, attendees will learn

1. The importance of protecting and supporting pollinators.
2. The purpose of the Pollinator Garden Certification program offered by Penn State Extension.
3. The steps to obtain pollinator-friendly certification.



What is a Pollinator?

A pollinator is the animal that moves pollen from the male part of a plant to the female part to allow the production of fruit and seed = pollination.

A pollinator is NOT the plant that provides the pollen.

Pollinators include

- Bees and wasps, flies, butterflies and moths, birds, bats and other small mammals, beetles, other insects



Why is it important to protect and support pollinators?

The USDA estimates¹

- 75% of flowering plants and 35% of food crops depend on animal pollinators
- Crop yields improved by 3,500+ species of native bees
- One of every three bites of food exists because of animal pollinators



Why is it important to protect and support pollinators?

Pollinators need our help!

Populations of native pollinators are declining worldwide: some species are at risk of extinction.

Native Bees

- At least 28% of North American bumble bees have experienced significant declines.²

Butterflies

- 19% of butterfly species in the United States are at risk of extinction.²



Why is it important to protect and support pollinators?

Pollinators need our help!

Population declines caused by

- Habitat loss and changes in land use
 - Lack of pollinator-friendly plantings
- Competition from non-native species
 - Disease and parasites
- Pesticides and other environmental contaminants
- Climate change

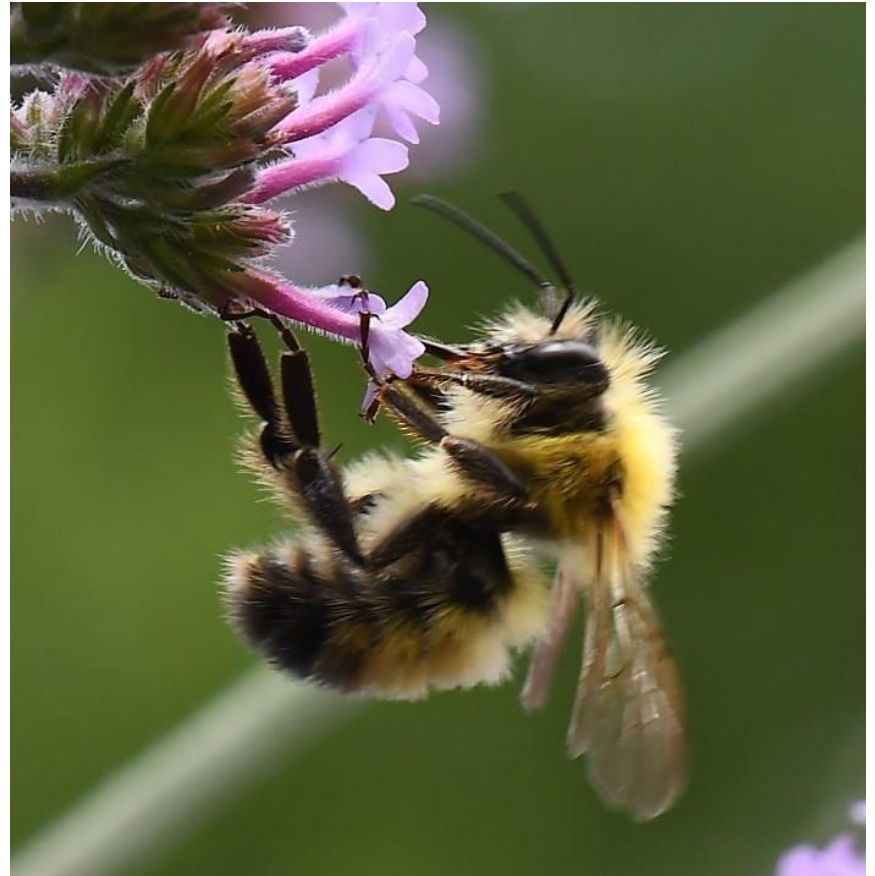
“Penn State Extension Master Gardeners are taking action to protect pollinators by planting pollinator-friendly gardens and providing education for the gardening public.”³

Pollinator Garden Certification

You Can Help!

- Provide food and habitat for native insects/animals
 - Pollinators protect plant diversity and food sources
- Pollinator-friendly certification helps support a healthy ecosystem
- Qualifying gardens receive certificates; yard signs available

Certification is not necessary to support pollinators.



Perplexing bumble bee on verbena bonariensis. © 2024, Angela Hartley.



How to Obtain Pollinator-Friendly Certification

Five Steps

1. Provide food for adult insects and larvae
2. Provide a water source
3. Provide shelter and nesting sites
4. Avoid invasive plants
5. Avoid pesticides

Document with photos

Step 1: Provide Food Sources

Adult insects and their larvae need food from early spring to late fall.

Use native plants that bloom throughout year:

- Minimum 3 different native herbaceous perennials (5 of each)
 - Bloom March to May
 - Bloom June to August
 - Bloom September to October
- Minimum 4 different native trees and/or shrubs
- Minimum 3 different native host plants for insect larvae



Flat-tailed leaf cutting bee on verbena bonariensis. © 2024, Angela Hartley.



Step 2: Provide a Water Source

Insects need water for drinking and reproduction.

One or more of the following required:

- Butterfly puddling area
- Birdbath or shallow water source with rocks or marbles
- Pond
- Stream
- Water garden
- Spring

Step 3: Provide Shelter and Nesting Sites

Shelter and nesting sites will encourage pollinators to use your garden.

- Densely planted areas provide shelter from predators
- Leave garden cleanup until late spring
- Provide 2 of the following:
 - Dead wood
 - Rock pile or wall
 - Spaces of bare ground
 - Bee houses (“bug hotels”)



Pseudoanthidium nanum on New England Aster. © 2024, Angela Hartley



Step 4: Remove Invasive Plants

Invasive species = “non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.”⁴

- Avoid acquiring invasive ornamental plants
- Develop a plan to actively remove and/or avoid use of invasive plants



Step 5: Reduce Use of Pesticides

Pesticides do not discriminate between pests and beneficial insects.

They can

- Directly affect pollinators
- Compound other stressors
- Affect future generations
- Contaminate pollen
- Remove floral resources

Reduce or eliminate use of pesticides



How to Apply

1. Download and complete the planning worksheet (not the same as the application)
2. Establish plants for at least 1 year
3. Take and label photographs of property
4. Complete the online application
 - \$10 processing fee



Notes on Native Plants

Pollinator-friendly certification is dependent on the use of native plants, i.e., native to a particular area without being planted by humans:

- Healthier food source
- Evolved with insects
- Bloom at right time to support pollinators at different life stages
- Well adapted to local conditions; require less maintenance
 - Conserve water

Native Perennials by Bloom Time



Late-season (September- mid-October)

White and Pink Turtlehead
Blue Mistflower
Various Goldenrods
Blue Wood Aster
Aromatic Aster
New England Aster
Thoroughwort



Mid-season (June- August)

Anise Hyssop
Various Milkweeds
Joe Pye Weed
Boneset
Perennial Sunflowers
Blazing Star
Purple Coneflower



Early-Season (March- May)

Spring Beauty
Dutchman's Breeches
Golden Alexander
Trout Lily
Wild Columbine
Wild Geranium
Virginia Bluebells
Foamflower



Sample Photos Submitted with Application

Herbaceous Perennials

This photo shows

- Cardinal flower
- Great blue lobelia
- Black cohosh
- Beardtongue
- Coneflower
- Blanket flower

Bed in back has black-eyed Susan
and bee balm.



Herbaceous Perennials

This photo shows helenium and Turk's cap lily (along with dahlias and sunflower).

Sample Photos Submitted with Application



Water Source



Shelter/Nesting Site (dead tree)

Sample Photos Submitted with Application



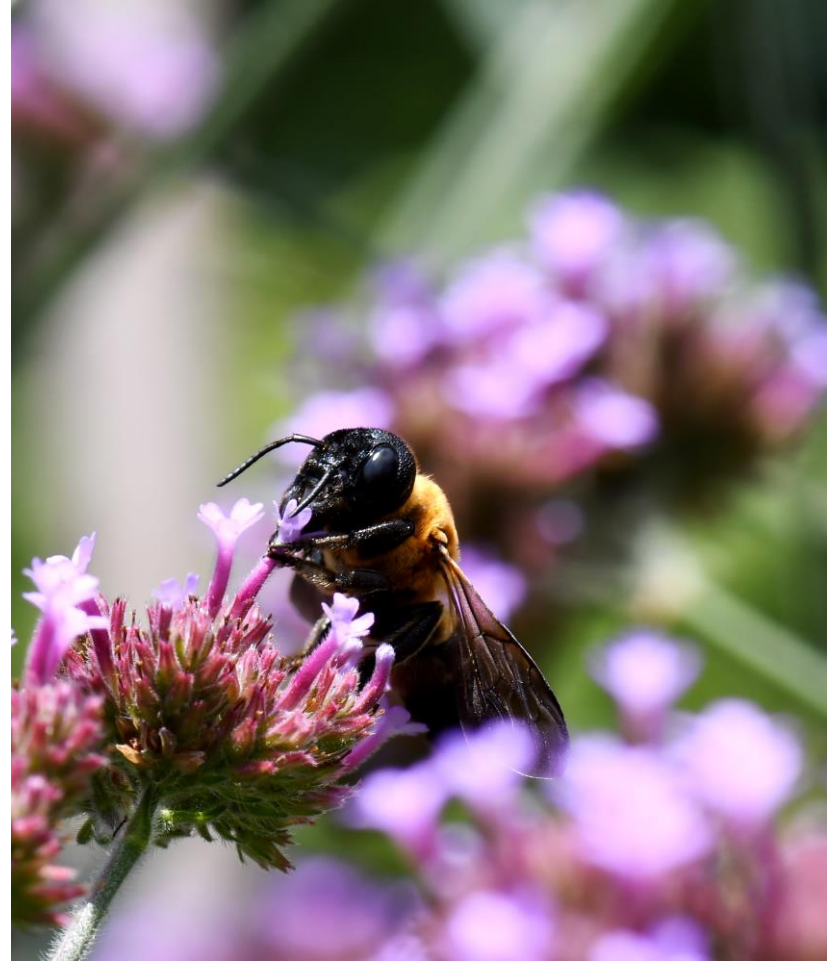
Willow Oak



Sweet Shrub

It Works!

Willowdale Farm: 198 Documented Species of Insects



Photos left to right: great spangled fritillary on purple coneflower and sculptured resin bee on verbena bonariensis. © 2024, Angela Hartley.

References

1. U.S. Department of Agriculture. (n.d.). The Importance of Pollinators. <https://www.usda.gov/about-usda/general-information/initiatives-and-highlighted-programs/peoples-garden/importance-pollinators#:~:text=Three%2Dfourths%20of%20the%20world%27s,bites%20of%20food%20you%20eat>
2. Xerces Society. (n.d.). What's at Stake? <https://www.xerces.org/pollinator-conservation/whats-at-stake>
3. Penn State Extension. (n,d,). Pollinator Garden Certification. https://extension.psu.edu/programs/master-gardener/outreach/pollinator-certification?gad_source=1&gclid=Cj0KCQiAyc67BhDSARIsAM95QztKSvfIF9MQeh5doSPLnSOkPalqujgwZVdPz4mWsTnB8-4sUMsVrfYaAqJdEALw_wcB
4. National Invasive Species Information Center. (n.d.). What are Invasive Species? <https://www.invasivespeciesinfo.gov/what-are-invasive-species>

Interested in learning more?

Master Gardener Pollinator Habitat Certification

<https://pollinators.psu.edu/landscaping-for-pollinators/pollinator-habitat-certification>



Pennsylvania Native Plants for the Perennial Garden

<https://extension.psu.edu/pennsylvania-native-plants-for-the-perennial-garden>