

# Plant by Numbers

Plants, growing steps, and sample designs to support Specialist Bees, Bumble Bees, and Butterflies & Moths

## Specialist Bees

- Native solitary bees that depend on a very narrow range of plants to provide pollen for their young.
- Adults emerge when their host plants bloom.
- These are very docile bees that usually nest in individual tunnels in the ground.

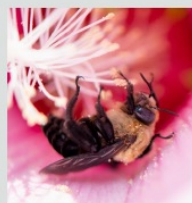


PHOTO: KATE ESTROP

Hibiscus turrel bee (*Ptilothrix bombiformis*) on crimson-eyed rosemallow (*Hibiscus moscheutos*)



PHOTO: DOUG BERUBE

Drury's long-horned bee (*Melissodes druriellus*) on aster (*Symphyotrichum*)

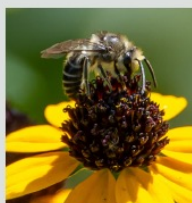


PHOTO: DOUG BERUBE

Aster cellophane bee (*Colletes compactus*) on brown-eyed Susan (*Rudbeckia triloba*)



PHOTO: JOE MACINDEVAR

Hairy-banded mining bee (*Andrena hirticincta*) on goldenrod (*Solidago*)

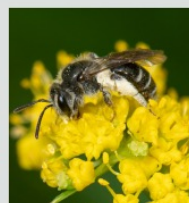


PHOTO: HEATHER HOLM

Golden-Alexanders mining bee (*Andrena ziziae*) on golden zizia (*Zizia aurea*)

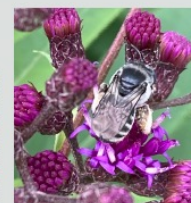


PHOTO: G. HUGHES

Denticulate long-horned bee (*Melissodes denticulatus*) on ironweed (*Vernonia*)

## Bumble Bees

- These native social bees visit many different plants for nectar and pollen.
- The bumble bee colony nests in the ground or on the ground.
- Only the newly emerged mated queen survives the winter. She starts a new colony in spring.



PHOTO: @ROXANE BERGERON INAT

Common eastern bumble bee (*Bombus impatiens*) on goldenrod (*Solidago* sp.)

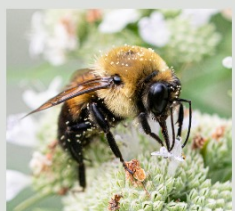


PHOTO: ERIN AVRAM

Brown-belted bumble bee (*Bombus griseocollis*) on mountainmint (*Pycnanthemum muticum*)

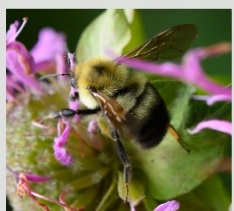


PHOTO: @ROAMINGTHEWOODS INAT

Two-spotted bumble bee (*Bombus bimaculatus*) on wild bergamot (*Monarda fistulosa*)

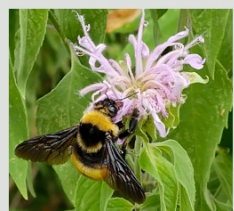


PHOTO: @STIRMARK INAT

Black and gold bumble bee (*Bombus auricomus*) on wild bergamot (*Monarda fistulosa*)

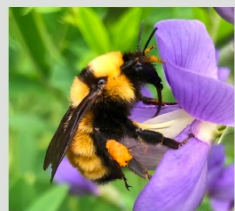


PHOTO: @JEANKUNIS INAT

Golden northern bumble bee (*Bombus fervidus*) on blue wild indigo (*Baptisia australis*)

## Butterflies and Moths

- Most adult butterflies and some moths visit flowers for nectar.
- Adult female butterflies and moths will seek out specific plants to lay their eggs. These "host plants" provide food for developing caterpillars.
- Many bird species collect caterpillars and other insects as food for developing chicks.

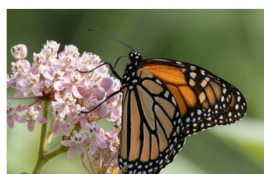


PHOTO: @RON GOETZ

Monarch (*Danaus plexippus*)



PHOTO: @MICHAEL BUTLER

Monarch caterpillar



PHOTO: D BELLSWORTH

Host plant: swamp milkweed (*Asclepias incarnata*)

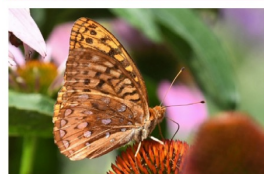


PHOTO: @ROAMINGTHEWOODS

Great spangled fritillary (*Speyeria cybele*)

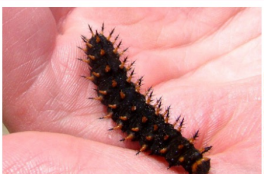


PHOTO: SUSAN DYER

Great spangled fritillary caterpillar



PHOTO: IVAN NEVROKOVETS

Host plant: prairie violet (*Viola pedatifida*)

Two of the many Ohio-nesting birds that depend on caterpillars to feed their young:

Black-capped Chickadee

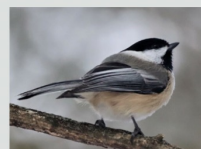


PHOTO: @JOHNSLOWERY

Northern Cardinal

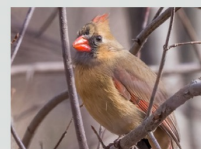


PHOTO: ED HASS



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Plant by Numbers is funded by USDA NIFA 20217000635562.

Learn more at: <http://u.osu.edu/plantbynumbers>

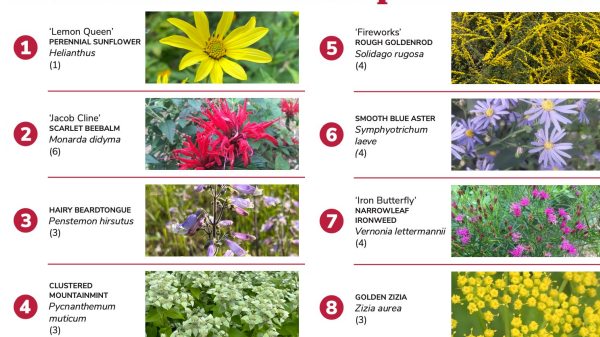


## Plant by Numbers for Specialist Bees, Bumble Bees and Butterflies &amp; Moths

## Planting for Specialist Bees



## Native Perennials for Specialist Bees



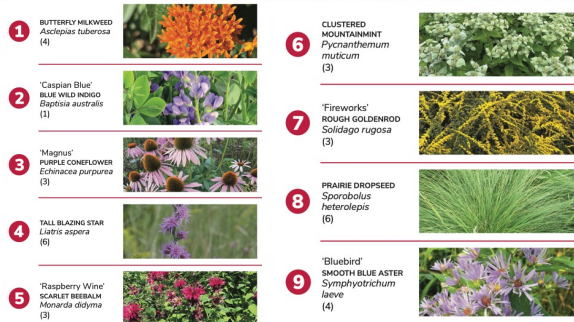
## Trees and Shrubs for Specialist Bees

Consider growing any of these native plants to invite even more specialist bees to the garden:

- Blueberry, *Vaccinium* spp.
- Dogwood trees or shrubs, *Cornus* spp.
- Willow trees or shrubs, *Salix* spp.



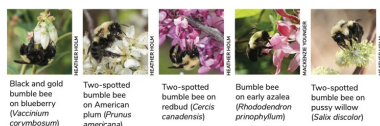
## Native Perennials for Bumble Bees



## Trees and Shrubs for Bumble Bees

Consider growing any of these native plants to invite even more bumble bees to the garden:

- Blueberry, *Vaccinium* spp.
- Cherry (native and introduced, edible and ornamental), *Prunus* spp.
- Eastern redbud, *Cercis canadensis*
- Rhododendron and azalea, *Rhododendron* spp.
- Willow, *Salix* spp.



## Planting for Bumble Bees



## Planting for Butterflies and Moths



## Native Perennials for Butterflies &amp; Moths



## Trees and Shrubs for Butterflies and Moths

- Apple (*Malus* spp.) 237 species
- Birch (*Betula* spp.) 284 species
- Blueberry (*Vaccinium* spp.) 217 species
- Cherry (*Prunus* spp.) 340 species
- Maple (*Acer* spp.) 238 species
- Oak (*Quercus* spp.) 436 species
- Poplar (*Populus* spp.) 249 species
- Willow (*Salix* spp.) 289 species



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Find plant lists,  
handouts and  
more:



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