

## PLANT BY NUMBERS:

# Good Garden Bugs

Plants, growing steps, and a sample design to support beneficial predatory insects

## Meet the Good Garden Bugs

Here are a few of the many predatory insects and spiders supported by this theme.

### Beetles (Coleoptera)



PHOTO: © JAY HEISER

Pictured here: Spotted pink lady beetle (*Coleomegilla maculata*) on dandelion

### Hover flies (family Syrphidae)



PHOTO: © JOSHUA EASTLAKE

Pictured here: Transverse flower fly (*Eristalis transversa*) on common boneset

### Lacewings (Neuroptera)



PHOTO: © GWINNINGHAM

Pictured here: Black-horned green lacewing (*Chrysopa nigricornis*) near aphids

### Spiders (Araneae)



PHOTO: © RICK NIRSCHL

Pictured here: White-banded crab spider (*Misumenoides formosipes*) with a captured fly on a flower in the daisy family

### True bug predators (Hemiptera)



PHOTO: © SONGARDEN28

Pictured here: Pale green assassin bug (*Zelus luridus*) on a flower in the daisy family

### Wasps (Hymenoptera)



PHOTO: © DILLONMR

Pictured here: Common blue mud-dauber wasp (*Chalybion californicum*) on a flower in the carrot family

Although some people believe that all insects are pests, most are neutral or beneficial. Insects provide many ecosystem services such as pollinating crops, making nutrients available through decomposition, and consuming insect pests. Insects are essential in the food web as food for birds, mammals, and many others. Good garden bugs are those insects (predators) that eat other insects (their prey) at some point in their life cycle. These predatory insects and their spider cousins patrol landscapes to find insect prey to fuel their activity; to feed to their young; or to lay their eggs in, on, or near. Good garden bugs provide free, natural pest management in the garden and add to garden biodiversity.

- Most good garden bugs also need nectar and/or pollen to survive. To provide this food, gardeners can include an assortment of flowering plants in the landscape. Different flower shapes, sizes,

colors, and bloom times will invite many beneficial insects to the garden, including predators, pollinators, and parasitoids.

- Many good garden bugs have short mouthparts that can't reach deep into flowers for nectar or pollen. Include garden plants with shallow flowers such as dill, fennel, Queen Anne's lace, or parsley—all in the carrot family. Many flowers in the daisy, mustard, and pea family also provide easy-to-access food.
- Allow a few stems of herb and vegetable plants to flower after the main harvest is complete. Basil, broccoli, lettuce, mustard, onions, and many other edible plants offer nectar and pollen when in flower.
- Some plants have extrafloral nectaries—structures found on leaves, stems, or other plant parts besides flowers. Insects use this nectar as an energy source. In exchange for nectar, insect predators may collect and eat nearby plant pests.

- Learn to tolerate some pest activity. A patch of aphids will attract hover flies, ladybird beetles, and lacewings. Consider a few pests as the “lure” to call in the pest control force.
- Habitat elements such as rocks, straw mulch, compost piles, brush piles, fallen leaves, and rotting wood can provide safe places and overwintering locations. Creative gardeners make some of these additions into decorative accents.
- Create “soft landings” under trees to allow beneficial insects to find shelter and places to overwinter. Plant shade-tolerant native perennials in these areas to provide nectar, pollen, and prey. Allow leaves, duff, and other garden debris to cover the soil.
- Many common weeds support good garden bugs, such as chicory, white clover, dandelion, Queen Anne's lace, and others. Tolerate some of these helpful nectar- and pollen-rich flowers.

# Planting for Good Garden Bugs

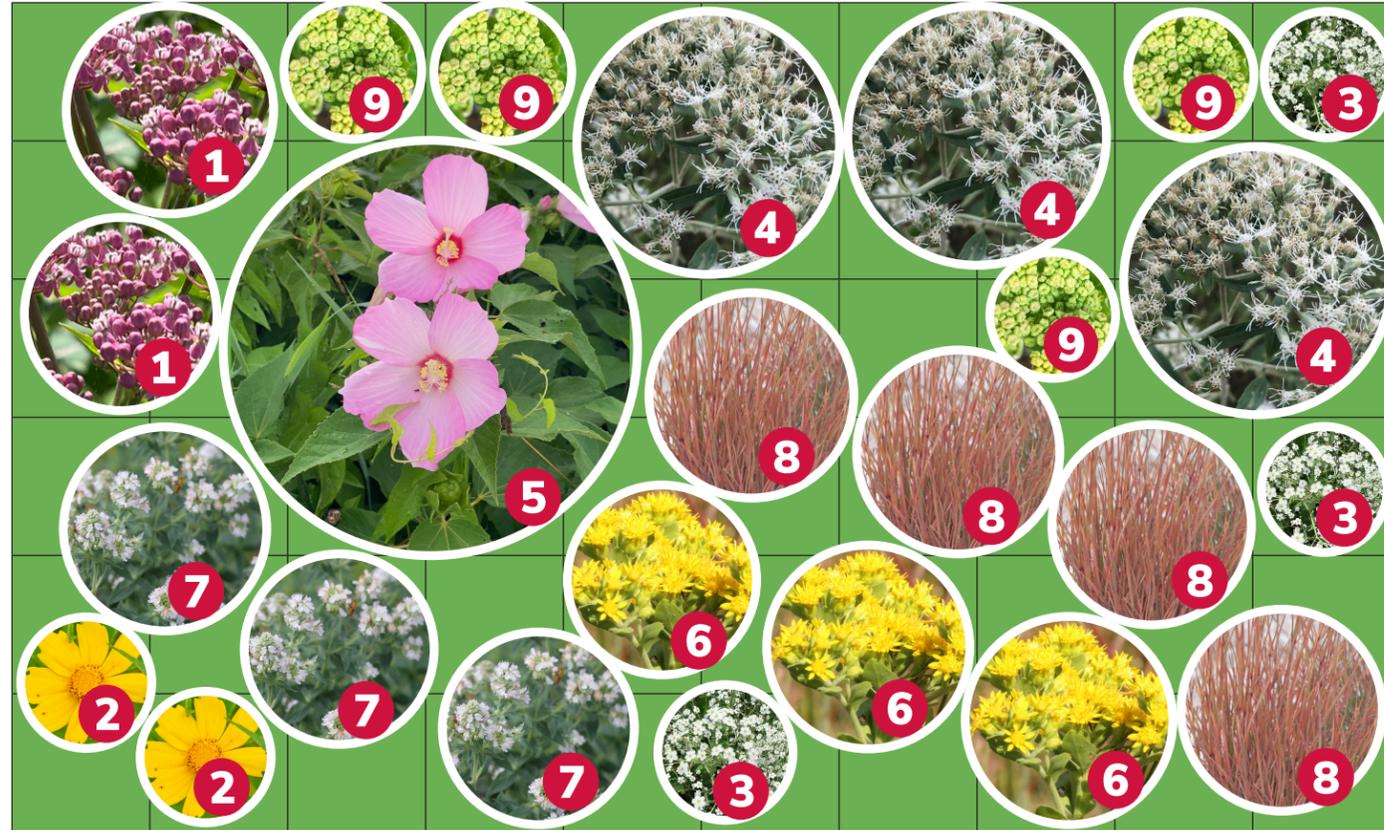
Use this diagram to plant a small 6'x10' garden plot to support good garden bugs in your Ohio garden, landscape, or nearby park.

The native perennials featured in this theme provide good garden bugs with a source of nectar and pollen, draw aphids and other insect prey as a lure, and provide habitat for safe places and overwintering.

The plant list offers a first and second plant option for each number, with the quantity of plants recommended in parenthesis. The first plant

option is pictured in the design. Feel free to use either plant, or mix and match depending on availability and preference. Can't find a specific plant? Use what's available locally including other native species and native cultivars. For a larger space, include more plants, grouping the same species together. The full design is presented here, but even a few plants will provide habitat for good garden bugs.

1 square = 1 foot



1. DEB ELLSWORTH | 2. SUSAN KAMPS | 3. @KITTYLEE | 4. DELLSWORTH | 5. @BGREENAWALT@INAT | 6. RAY STEWART | 7. VLK@INAT | 8. JOANNE TOLER | 9. @ERIC REINER

## Planting

- The planting site should be in full sun (6 or more hours per day) with good drainage.
- Prepare the site by completely smothering or removing all grass and weeds.
- For best results, consider adding 2 inches of compost or other organic soil amendment to the site before planting.
- Water plants after planting, then water as needed (possibly weekly) if the season is dry.
- These native perennials are relatively drought-tolerant once established.
- Mulch around newly planted perennials with straw, wood mulch, or newspaper to prevent weed growth.
- To invite even more good garden bugs to the landscape, add a simple water source such as a wide, shallow dish filled with pebbles and water. Empty, rinse, and refill weekly to discourage mosquito growth.

## Maintenance

- Leave seed heads on plants through winter as food for birds. If unwanted seedlings sprout in the garden, weed out or share these extra seedlings.
- Cut back dead perennial stalks in late winter to heights of between 12 and 18 inches. These standing stalks may provide nesting material for spring birds as well as nesting sites for wild bees in spring and summer.
- Reduce or eliminate the use of pesticides in the garden to protect good garden bugs. Broad-spectrum insecticides and pyrethroids used for mosquito control—as well as other insecticides—can harm beneficial insects. Bt for mosquitoes does not harm good garden bugs. Consult your local Ohio State University Extension office for earth-friendly pest management strategies.
- Find your local Extension office.



# NATIVE PLANTS FOR GOOD GARDEN BUGS

## FIRST PLANT OPTION

1

**SWAMP MILKWEED**  
*Asclepias incarnata*  
(2)



DEB ELLSWORTH

2

**LANCELEAF TICKSEED**  
*Coreopsis lanceolata*  
(2)



SUSAN KAMPS

3

**FLOWERING SPURGE\***  
*Euphorbia corollata*  
(3)



@KITTYLEE

4

**COMMON BONESET\***  
*Eupatorium perfoliatum*  
(3)



DELLSWORTH

5

**CRIMSONEYED ROSEMALLOW\***  
*Hibiscus moscheutos*  
(1)



@BGREENAWALT@INAT

6

**STIFF GOLDENROD**  
*Oligoneuron rigidum*  
(3)



© RAY STEWART

7

**VIRGINIA MOUNTAINMINT**  
*Pycnanthemum virginianum*  
(3)



VLK@INAT

8

**LITTLE BLUESTEM**  
*Schizachyrium scoparium*  
(4)



JOANNE TOLER

9

**MEADOW ZIZIA**  
*Zizia aptera*  
(4)



@ERIC REINER

## SECOND PLANT OPTION

**PRAIRIE MILKWEED**  
*Asclepias sullivantii*  
(2)



© TOMAS CURTIS

**HAIRY BEARDTONGUE**  
*Penstemon hirsutus*  
(2)



@BOBHIGGCOCK@INAT

**CANADIAN ANEMONE**  
*Anemone canadensis*  
(3)



@GWINNINGHAM

**CULVER'S ROOT**  
*Veronicastrum virginicum*  
(3)



DELLSWORTH

**AMERICAN SENNA\***  
*Senna hebecarpa*  
(1)



DELLSWORTH

**SHOWY GOLDENROD**  
*Solidago speciosa*  
(3)



@ERIC ATTAWAY

**RATTLESNAKE MASTER**  
*Eryngium yuccifolium*  
(3)



@JEN BRUMFIELD

**PRAIRIE DROPSEED\***  
*Sporobolus heterolepis*  
(4)



EDWDD4@INAT

**GOLDEN ZIZIA**  
*Zizia aurea*  
(4)



DELLSWORTH

# More Plants for Good Garden Bugs



@IVY\_CREEK

Plants with extrafloral nectaries such as catalpa trees (*Catalpa* spp.) can attract good garden bugs.

- Consider growing any of these native plants with extrafloral nectaries.
  - Trees and shrubs: beautyberry (*Callicarpa* spp.), catalpa (*Catalpa* spp.) cherry (*Prunus* spp.), elderberry (*Sambucus* spp.), poplar (*Populus* spp.), viburnum (*Viburnum* spp.), and willow (*Salix* spp.)
  - Herbaceous plants: fava beans (*Vicia faba*, not native), hibiscus (*Hibiscus* spp.), partridge pea (*Chamaecrista nictitans*), and sunflower (*Helianthus* spp.)
- Ornamental annuals, both native and introduced, can provide an important food source for good garden bugs, including nectar, pollen, and prey.

## Mary M. Gardiner's "10 Terrific Annuals for Good Garden Bugs"

1. Basil (*Ocimum basilicum*)
2. Cilantro (*Coriandrum sativum*)
3. Cosmos (*Cosmos* spp.)
4. Dill (*Anethum graveolens*)
5. Kale, edible or ornamental (*Brassica oleracea*)
6. Lantana (*Lantana camara*)
7. Marigold (*Tagetes* spp., single flowers preferred; avoid double flowers)
8. Salvia (*Salvia* spp.)
9. Sunflower (*Helianthus annuus*, avoid pollenless cultivars)
10. Sweet alyssum (*Lobularia maritima*)

## Finding Native Plants

Native plants are becoming easier to find and purchase at local nurseries and online. Check with both large and small nurseries as well as mail-order catalogs. To find native plant sales nearby, check with local or regional groups such as arboreta, botanical gardens, nature centers, zoos, county Soil and Water Conservation District offices, and local garden clubs and groups including Master Gardener Volunteers.

### Ohio Nurseries Selling Native Plants

- Ohio Native Plant Month's website ([ohionativeplantmonth.org/native-plant-sources](http://ohionativeplantmonth.org/native-plant-sources))
- Lake Erie Allegheny Partnership website ([leapbio.github.io/nurseries](http://leapbio.github.io/nurseries))



### For More Information

- *Good Garden Bugs: Everything You Need to Know about Beneficial Predatory Insects* (book). Mary M. Gardiner, PhD.
- Soft Landings (infographic). Heather Holm. [go.osu.edu/softlandings](http://go.osu.edu/softlandings)



Plant by Numbers is funded by USDA NIFA 20217000635562.

Garden design created by Debra Knapke.

Thanks to Kathy Burkholder, retired horticulturist with Ohio State's Chadwick Arboretum & Learning Gardens, for copy editing the full Plant by Numbers series.

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