

**Central Pennsylvania  
Pocket Guides**

**Plants For Flies**



# Fly Gardens

## Class Insecta, Order Diptera

FLIES CAN BE distinguished from other insects by their one pair of wings. Other pollinating insects have two pairs. Diptera means “two wings”. Although some flies are near perfect bee mimics, most lack specialized pollen-carrying hairs like bees and are therefore generally thought to be less efficient pollinators by comparison.

However, their importance as pollinators should not be underestimated. In fact, flies are the second most important pollinators after bees. They have been reported to visit flowers of 172 plant families and this is likely to be a conservative figure. Flies are especially important in alpine and subarctic environments where there are far fewer bees.

Flies are a diverse group of insects. As such, they have a wide variety of diets reflected by their distinct mouthparts. Flies can bite, lap, or suck food depending on the species. Flower-feeding flies with long sucking proboscises can forage from deep, tubular flowers while species with short proboscis prefer flatter flowers.

FLIES MOSTLY CONSUME nectar from flowers but some species can eat pollen. They typically prefer radially symmetrical flowers that are small, flat, white or cream, or sometimes greenish yellow in color. The flowers can be sweet or musty and are mostly day blooming. Flies' preference for these flowers is a result of their mouthpart size and structure, their preference for nectar versus pollen, and their ability to detect color. Daytime flies have large compound eyes that see a range of colors, even into the ultra-violet which humans cannot see.

Unlike bees, which collect pollen as a protein source for their young, flies only feed themselves. They carry pollen inadvertently on their body from flower to flower aiding in pollination. Fruit set of crops benefit from visiting flies including mango, cacao, onion, and carrot for seed propagation. Three main families of flies visit flowers in temperate gardens- syrphid, muscid, and bombyliid flies.







Syrphid flies, also known as hover flies, are the best pollinating flies. Some species are near perfect bee mimics, with yellow and black bodies covered in hair. Mimicry reduces flower competition with bees and protects flies from bird predation.

MUSCLID FLIES ARE the second most important group after syrphids in most pollinator communities. Many look like common house flies but are ecologically vital pollinators in arctic and alpine regions.

Bombyliid flies have a unique proboscis that is rigid and straight, allowing them to access flower nectar. These flies are important pollinators of springtime flowers in North America. Bee flies are parasites of insect eggs and larvae including bees, wasps, beetles, and grasshoppers.

Gardeners will be amazed by the diversity of fly species that can be found in their backyard. Flies are a joy to watch as they feed from flowers. Some, such as the appropriately named hover fly, are able to hover in midair.

### Plant Symbols Key

|  |   |
|--|---|
|  Full Shade |  Dry   |
|  Part Sun   |  Moist |
|  Full Sun   |  Wet   |

# Black Willow

*Salix nigra*



## Floral Phenology



|            |                            |
|------------|----------------------------|
| Type       | Deciduous Tree             |
| Sun        | ☀ ☀                        |
| Water      | 💧 💧                        |
| Size       | 30' to 60' Tall 40' Spread |
| Soil       | Acidic Neutral             |
| Tolerances | Erosion                    |

# New Jersey Tea

*Ceanothus americanus*



## Floral Phenology



|            |                               |
|------------|-------------------------------|
| Type       | Deciduous Shrub               |
| Sun        | ☀ ☀                           |
| Water      | 💧 💧                           |
| Size       | 3' to 4' Tall 3' to 5' Spread |
| Soil       | Acidic Neutral                |
| Tolerances | Drought                       |

# Black Cherry

*Prunus serotina*



## Floral Phenology



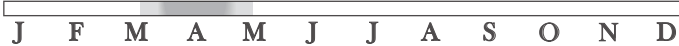
|            |                            |
|------------|----------------------------|
| Type       | Deciduous Tree             |
| Sun        | ☀ ☀                        |
| Water      | 💧                          |
| Size       | 50' to 80' Tall 40' Spread |
| Soil       | Acidic Neutral             |
| Tolerances | Shade                      |

# Sassafras

*Sassafras albidum*



Floral Phenology



|            |                            |
|------------|----------------------------|
| Type       | Deciduous Tree             |
| Sun        | ☀ ☀                        |
| Water      | 💧                          |
| Size       | 30' to 50' Tall 30' Spread |
| Soil       | Acidic Neutral             |
| Tolerances | Deer Drought               |



# Rattlesnake Master

*Eryngium yuccifolium*



## Floral Phenology



|            |                               |
|------------|-------------------------------|
| Type       | Herbaceous Perennial          |
| Sun        | ☀                             |
| Water      | ☪                             |
| Size       | 2' to 5' Tall 2' to 3' Spread |
| Soil       | Acidic Neutral Alkaline       |
| Tolerances | Drought Erosion               |

# Common Cow Parsnip

*Heracleum maximum*



## Floral Phenology



|            |                               |
|------------|-------------------------------|
| Type       | Herbaceous Perennial          |
| Sun        | ☀                             |
| Water      | 💧                             |
| Size       | 3' to 5' Tall 2' to 3' Spread |
| Soil       | Acidic Neutral Alkaline       |
| Tolerances | Clay                          |

# Smooth Sumac

*Rhus glabra*



## Floral Phenology

J F M A M J J A S O N D

|            |                                 |
|------------|---------------------------------|
| Type       | Deciduous Shrub                 |
| Sun        | ☀ ☀                             |
| Water      | ☹ ☹                             |
| Size       | 9' to 15' Tall 9' to 15' Spread |
| Soil       | Acidic Neutral Alkaline         |
| Tolerances | Drought Erosion                 |

# Clustered Mountainmint

*Pycnanthemum muticum*



## Floral Phenology

| Floral Phenology        |                               |
|-------------------------|-------------------------------|
| J F M A M J J A S O N D |                               |
| Type                    | Herbaceous Perennial          |
| Sun                     | ☀ ☀                           |
| Water                   | 💧 💧                           |
| Size                    | 2' to 3' Tall 3' to 4' Spread |
| Soil                    | Acidic Neutral                |
| Tolerances              | Drought Erosion               |

# Brown Eyed Susan

*Rudbeckia triloba*



## Floral Phenology



|            |                               |
|------------|-------------------------------|
| Type       | Herbaceous Perennial          |
| Sun        | ☀ ☀                           |
| Water      | 💧 💧                           |
| Size       | 1' to 5' Tall 1' to 2' Spread |
| Soil       | Acidic Neutral                |
| Tolerances | Drought                       |

# False Aster

*Boltonia asteroides*



## Floral Phenology



|            |                               |
|------------|-------------------------------|
| Type       | Herbaceous Perennial          |
| Sun        | ☀ ☀                           |
| Water      | 💧                             |
| Size       | 3' to 6' Tall 2' to 4' Spread |
| Soil       | Acidic Neutral Alkaline       |
| Tolerances | Clay                          |

# Virgin's Bower

*Clematis virginiana*



## Floral Phenology



|            |                                 |
|------------|---------------------------------|
| Type       | Perennial Woody Vine            |
| Sun        | ☀ ☀                             |
| Water      | 💧 ●                             |
| Size       | 10' to 20' Tall 3' to 6' Spread |
| Soil       | Acidic Neutral Alkaline         |
| Tolerances | Deer                            |

# Frost Aster

*Symphyotrichum pilosum*



## Floral Phenology



|            |                               |
|------------|-------------------------------|
| Type       | Herbaceous Perennial          |
| Sun        | ☀                             |
| Water      | 💧                             |
| Size       | 3' to 5' Tall 2' to 4' Spread |
| Soil       | Acidic Neutral                |
| Tolerances | Frost Drought Erosion         |



## NOTES FROM THE GARDEN

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## NOTES FROM THE GARDEN

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## NOTES FROM THE GARDEN

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THIS FIELD GUIDE was created by Aubrey Miller, Heather Frantz, Christina Grozinger, and Harland Patch. Illustrations produced by Victoria Millsap. Funding was provided by the Center for Pollinator Research, the Huck Institutes for the Life Sciences, and the Penn State College of Agricultural Science.

Plants in this guide were selected for a high degree of attraction in most temperate North American landscapes.

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