

# POLLINATOR PREFERENCE FOR FORAGE FLOWERS

Results include 2019 data from six different field sites: one site at Audubon Greenway, three sites at North Park, one site at Frick Park, and one site at Schenley Park. All sites are naturalized meadows, with minimal management often not exceeding mowing every fall.

Total number of wildflowers surveyed is 55, which includes native and non-native species.

Only 17 of the wildflowers have sufficient data (>12 sample plots) for reporting results:

<i>Achillea millefolium</i> (Common Yarrow)	<i>Leucanthemum vulgare</i> (Oxeye Daisy)
<i>Apocynum androsaemifolium</i> (Spreading Dogbane)	<i>Monarda fistulosa</i> (Wild Bergamot)
<i>Asclepias syriaca</i> (Common Milkweed)	<i>Rudbeckia spp.</i> (Yellow Coneflower)
<i>Asclepias tuberosa</i> (Butterfly Weed)	<i>Securigera varia</i> (Crownvetch)
<i>Barbarea vulgaris</i> (Garden Yellowrocket)	<i>Solidago spp.</i> (Goldenrod)
<i>Cirsium arvense</i> (Canada Thistle)	<i>Symphyotrichum lateriflorum</i> (Calico Aster)
<i>Daucus carota</i> (Queen Anne's Lace)	<i>Trifolium spp.</i> (Red/White Clover)
<i>Erigeron spp.</i> (White Aster)	<i>Vernonia noveboracensis</i> (New York Ironweed)
<i>Helianthus + Heliopsis spp.</i> (Yellow Sunflower)	

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Top 5 wildflowers that attract **all pollinators** in order from most to least attractive:

*Symphyotrichum lateriflorum* (Calico Aster)  
***Monarda fistulosa* (Wild Bergamot)**  
*Vernonia noveboracensis* (New York Ironweed)  
***Asclepias syriaca* (Common Milkweed)**  
*Solidago spp.* (Goldenrod)

Top 5 wildflowers that attract **all bees** in order from most to least attractive:

*Symphyotrichum lateriflorum* (Calico Aster)  
***Monarda fistulosa* (Wild Bergamot)**  
*Vernonia noveboracensis* (New York Ironweed)  
***Asclepias syriaca* (Common Milkweed)**  
***Asclepias tuberosa* (Butterfly Weed)**

Top 5 wildflowers that attract **bumble bees** in order from most to least attractive:

***Monarda fistulosa* (Wild Bergamot)**  
***Asclepias syriaca* (Common Milkweed)**  
*Helianthus + Heliopsis spp.* (Yellow Sunflower)  
***Asclepias tuberosa* (Butterfly Weed)**  
*Solidago spp.* (Goldenrod)

Top 5 wildflowers that attract **honey bees** in order from most to least attractive:

*Symphyotrichum lateriflorum* (Calico Aster)  
*Solidago spp.* (Goldenrod)  
*Cirsium arvense* (Canada Thistle)  
***Asclepias syriaca* (Common Milkweed)**  
***Asclepias tuberosa* (Butterfly Weed)**

Top 5 wildflowers that attract **sweat bees** in order from most to least attractive:

*Symphyotrichum lateriflorum* (Calico Aster)  
*Vernonia noveboracensis* (New York Ironweed)  
***Asclepias tuberosa* (Butterfly Weed)**  
***Monarda fistulosa* (Wild Bergamot)**  
*Helianthus + Heliopsis spp.* (Yellow Sunflower)

Top 5 wildflowers that attract **butterflies and moths** in order from most to least attractive:

***Monarda fistulosa* (Wild Bergamot)**  
*Vernonia noveboracensis* (New York Ironweed)  
***Asclepias tuberosa* (Butterfly Weed)**  
*Rudbeckia spp.* (Yellow Coneflower)  
***Asclepias syriaca* (Common Milkweed)**

## POLLINATOR COMPARISON BETWEEN PARTNERS

Comparisons are based on 2019 data. All properties were sampled between May and October, with an average number of 135 plots surveyed per property.

	Audubon Greenway	North Park	Schenley + Frick Parks
Shannon Diversity Index (all pollinators)	2.3	2.2	2.2
Pollinator Density (per m2)	10.2	10.0	13.1
Bee Density (per m2)	6.7	6.9	8.6
Bumble Bee Density (per m2)	<b>0.5</b>	<b>2.0</b>	<b>1.9</b>
European Honey Bee Density (per m2)	<b>3.2</b>	<b>1.6</b>	<b>2.6</b>
Sweat Bee Density (per m2)	2.1	2.3	3.0
Butterfly/Moth Density (per m2)	0.6	0.4	0.7
Hover/Drone Fly Density (per m2)	<b>0.7</b>	<b>1.1</b>	<b>2.1</b>
Soldier Beetle Density (per m2)	<b>0.9</b>	<b>0.3</b>	<b>0.2</b>
Wasp Density (per m2)	0.5	0.2	0.4

Why is bumble bee density relatively low at Audubon Greenway?

Absence of wild bergamot and low abundance of yellow sunflower

Why is European honey bee density relatively high ...?

Greater density of bee hives surrounding the property

Why is hover/drone fly density relatively low ...?

Unknown – it does not appear to be linked to floral preference

Why is soldier beetle density relatively high ...?

Unknown – it does not appear to be linked to floral preference

## POLLINATOR COMPARISON BETWEEN YEARS AT AUDUBON GREENWAY

Comparisons are based on 2018 and 2019 data and are only made for wildflowers that consisted of more than 12 sampling plots in a given year.

	Density (per m <sup>2</sup> )					
	All Pollinators		All Bees		Butterflies/Moths	
	2018	2019	2018	2019	2018	2019
<b>Butterfly Weed</b>	7.1	11.3	5.2	9.3	0.8	1.4
<b>Common Milkweed</b>	4.4	14.3	2.9	10.8	0.2	0.7
<b>Spreading Dogbane</b>	4.1	5.0	1.7	3.7	0.0	0.2
<b>Goldenrod</b>	9.0	11.0	5.2	5.9	0.2	0.2

Density of pollinators was greater in 2019 in nearly every circumstance.