The Best Plant Species to Attract Diverse Beneficial Insects, Pollinators and Hummingbirds for Temperate Eastern and Central North America

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If you'd like to learn more about creating a haven for insects and birds that help with pest control, sign up for my Advanced Edible Forest Gardens course, June 21-23 2024 in Massachusetts, at advancedforestgardens.eventbrite.com, or see my events calendar at perennialsolutions.org.

My first deep investigation of plant to attract beneficial insects and hummingbirds was for *Edible Forest Gardens Volume II* in 2005. At the time we produced a long list, and there are indeed a great many species to choose from – so many that it can almost paralyzing choosing which to plant. Today much more detailed information is available about plants that target specific beneficial organisms.

New Jersey Tea is highly attractive to a broad range of beneficial insects. Image Eric Toensmeier, CC BY-SA 4.0.

For this article I am looking at the best species for:

- Key genera of crop-pollinating bees
- Key wasp genera that serve as predatory and parasitoids of crop pests
- Pollinating flies and beetles
- Hummingbirds (which eat a lot of insects including spotted-wing drosophila)
- Important larval hosts of pollinating butterflies and moths

Under these criteria, from the hundreds of species of plants that one might select for pest control and pollination, a small number of "superspecies" stand out as powerful and multifunctional. They represent a great place to start and should be included in plantings wherever possible throughout the Eastern Forest region.

Many plant species are fantastic for one group of beneficial insects (or hummingbirds), or even several. These plants are valuable and should certainly be grown. But only a few standouts provide important resources across many categories. Those are reviewed here. All are native to the eastern region, though not necessarily to all of it.

Because the species profiled here are attractive to a wide range of beneficial organisms they can serve as anchors to plantings which also feature other pollinator and insect-attracting plants. You want to have

something flowering all season, which may well involve other species not covered here – and species of high value to specialized species (like cardinal flower for hummingbirds or Maryland senna for bumblebees) are also important.

If space or budget is limited, why not focus on plants that will provide you with the greatest impact across a wide range benefits.

Top species and their flowering times

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
FALSE INDIGO (*Amorpha*)									
False indigo (*A. fruticosa*)			--XX	XXXX	X---				
MILKWEEDS (*Asclepias*)									
Swamp milkweed (*A. incarnata*)				---X	XXXX	X---			
Common milkweed (*A. syriaca*)				XXXX	XXXX				
Butterflyweed (*A. tuberosa*)				-XXX	XXXX				
NEW JERSEY TEA (*Ceanothus*)									
New Jersey tea (*C. americanus*)					-XXX	X---			
BEE BALM & BERGAMOT (Monarda)									
Wild bergamot (*M. fistulosa*)				---X	XXXX	XXX-			
Dotted horsemint (*M. punctata*)				---X	XXXX	XXXX			
CHERRY & PLUM (*Prunus*)									
Black cherry (*P. serotina*)			XXXX	XX--					
American plum (*P. americana*)		--XX	XXXX	XX--					
Chokecherry (*P. virginiana*)		---X	XXXX	XX--					
MOUNTAIN MINT (*Pycnanthemum*)									
Narrowleaf mountain mint (*P. tenuifolium*)					XXXX	XXXX	XXXX		
Virginia mountain mint (*P. virginianum*)				---X	XXXX	XXXX			
WILLOWS (*Salix*)									
Pussy willow (*S. discolor*)	---X	XXXX	XX--						
GOLDENRODS (*Solidago* etc.)									
Blue-stemmed goldenrod (*S. caesia*)							---X	XXXX	XX--
Zig-zag goldenrod (*S. flexicaulis*)						--XX	XXXX		
Stiff goldenrod (*S. rigida*)					---X	XXXX	XXXX		
Showy goldenrod (*S. speciosa*)						--XX	XXXX	XX--	
ASTERS (*Symphyotrichum* etc.)									
Large-leaved aster (*Eurybia macrophylla*)				---X	XXXX	XXXX	XX--		
Panicled aster (*S. lanceolatum*)						-XXX	XXXX		
New England aster (*S. novae-angliae*)						XXXX	XXXX		
Sky blue aster (*S. oolentangiense*)						-XXX	XXXX		
Arrowleaf aster (*S. urophyllum*)						XXXX	XXXX		
GOLDEN ALEXANDERS (*Zizia*)									
Golden Alexanders (*Z. aurea*)		--XX	XXXX	XX--					

False Indigo: *Amorpha* species

Amorpha fruticosa. Image Eric Toensmeier, CC BY-SA 4.0.

Crop-pollinating bees	Very high
Other bees	High
Crop-protecting wasps	Medium
Other wasps	High
Pollinating flies	No
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	High
Hummingbirds	No

False indigo is noted at “attractive to many” beneficial organisms, though not all are specified. It is valuable for early flowering as well. Species native in the region include *A. canescens, A. fruticosa, A. herbacea, A. nitens,* and *A. nana.*

Also fixes nitrogen. Many other agroforestry uses including windbreak, erosion control, livestock fodder and more.

Milkweeds: *Asclepias* species

Asclepias incarnata. Image Ram-Man, GNU 1.2

Crop-pollinating bees	High
Other bees	Very high
Crop-protecting wasps	Very high
Other wasps	Very high
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	Medium
Hummingbirds	Very high

There are some 20 species of milkweed native to the Eastern Forest region. Among the most widespread are swamp milkweed (*A. incarnata*), common milkweed (*A. syriaca*), and butterflyweed (*A. tuberosa*).

Milkweeds are noted as monarch larval hosts, but are otherwise not an outstanding host to as diverse a range of species as plums and cherries for example.

Attractive to a particularly wide range of beneficial insects. Common milkweed used as a cooked vegetable, and quite delicious, though there are some toxicity issues (see Sam Thayer's writings on the subject).

New Jersey Tea: *Ceanothus americanus* & *C. herbaceus*

Ceanothus americanus. Image JohnOyston, CC BY-SA 1.0 Generic.

Crop-pollinating bees	Medium
Other bees	High
Crop-protecting wasps	High
Other wasps	High
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	High
Hummingbirds	High

While the West has an incredible diversity of *Ceanothus* species, *C. americanus* and *C. herbaceus* are the primary species of note in the Eastern Forest region.

Attracts an especially diverse range of beneficial insects. Fixes nitrogen, leaves used for tea.

Bee balm and bergamot: *Monarda* species

Monarda punctata. Image Rhododendrites, CC BY-SA 4.0.

Crop-pollinating bees	High
Other bees	High
Crop-protecting wasps	Very high
Other wasps	High
Pollinating flies	High
Pollinating beetles	High
Butterfly nectar	High
Larval host for butterflies and moths	Medium
Hummingbirds	Very high

There are 8 species in the Eastern Forest region, with bergamot (*M. fistulosa*) the most widespread. They are often grown as ornamentals. Also attractive to assassin and ambush bugs.

Some species used for tea. Some are quite weedy even where native.

Native cherries and plums: *Prunus* species

Prunus virginiana. Image Matt Lavin, CC BY-SA 2.0.

Crop-pollinating bees	Very high
Other bees	High
Crop-protecting wasps	Medium
Other wasps	Medium
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	Very high
Hummingbirds	High

Eastern North America features 11 native plums, with the American plum (*P. americana* most widely distributed. We also have 7 native cherries, with black cherry (*P. serotina*) and pin cherry (*P. pensylvanica*) the most common. Many have fruit with high wildlife value, with some edible for people as well. They range from tall trees to subshrubs.

Attractive to the most classes of beneficial insects and hummingbirds of the spring-blooming species, but not as early to bloom as others. Chokecherry in particular is attractive to a highly diverse group of beneficial insects.

Many (not all) have edible fruits, often better cooked than raw but some nice for fresh eating.

Mountain Mints: *Pycnanthemum* species

Pycnanthemum tenuifolium. Image peganum, CC BY-SA 2.0.

Crop-pollinating bees	Very high
Other bees	Very high
Crop-protecting wasps	Very high
Other wasps	Very high
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	No
Hummingbirds	No

There are 18 species native to the region. Perhaps the most widely distributed in narrowleaf mountain mint (*P. tenuifolium*). Leaves used for tea.

Willows: *Salix* species

Salix discolor. Image Famartin, CC BY-SA 4.0.

Crop-pollinating bees	High
Other bees	High
Crop-protecting wasps	No
Other wasps	Medium
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Limited
Larval host for butterflies and moths	Very high
Hummingbirds	No

There are 25 or more species native to the region. Attractive to many beneficial insects including fireflies. Not quite as multifunctional as other species but valued for extremely early flowering.

Many agroforestry uses including windbreak, livestock fodder, bank stabilization and more. Used in basketry.

Goldenrods: *Solidago, Euthamia,* and *Oligoneuron*

Solidago canadensis. Image Leonhard Lenz, CC BY-SA 4.0.

Crop-pollinating bees	Very high
Other bees	Very high
Crop-protecting wasps	Very high
Other wasps	Very high
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	High
Hummingbirds	No

The goldenrods were recently divided from the original genus *Solidago* into *Solidago, Euthamia* and *Oligoneuron.* Our region is home to an impressive 71 species of *Solidago.* There are also 6 species of *Euthamia* and 9 species of *Oligoneuron* in the eastern region.

Goldenrods are noted for ability to attract a very wide diversity of beneficial insects.

Asters: *Symphyotrichum* and related genera

Symphotrichum pilosum. Image Judy Gallagher, CC BY-SA 2.0.

Crop-pollinating bees	Very high
Other bees	Very high
Crop-protecting wasps	Very high
Other wasps	High
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	No
Hummingbirds	No

Like the goldenrods, the genus *Aster* was recently split into a handful of smaller genera: *Doellingeria, Eurybia, Ionactis, Oclemena,* and *Symphotrichum.*

We have 57 species of *Symphotrichum* native to the region, along with 3 species of *Doellingeria,*19 species of *Eurybia*, 1 species of *Ionactis* and 4 species of *Oclemena.*

Golden Alexanders: *Zizia aurea*

Zizia aurea. Image David Stang, CC BY-SA 4.0.

Crop-pollinating bees	High
Other bees	High
Crop-protecting wasps	High
Other wasps	Medium
Pollinating flies	Yes
Pollinating beetles	Yes
Butterfly nectar	Yes
Larval host for butterflies and moths	Low
Hummingbirds	No

Note many other members of this family highly rated for beneficials. Not quite as multifunctional as other species but valued for early flowering. Edible flowers.

Key References

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Holm (2021) *Wasps: Their Biology, Diversity, and Role as Benefical Insects and Pollinators of Native Plants*

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Xerces Society (2011) *Attracting Native Pollinators*

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