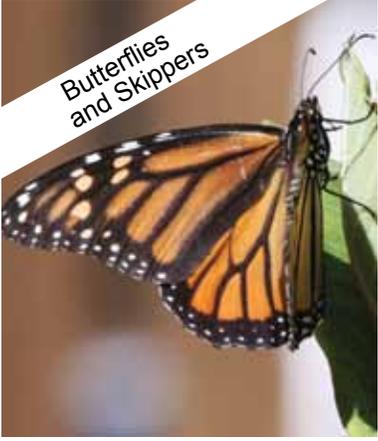


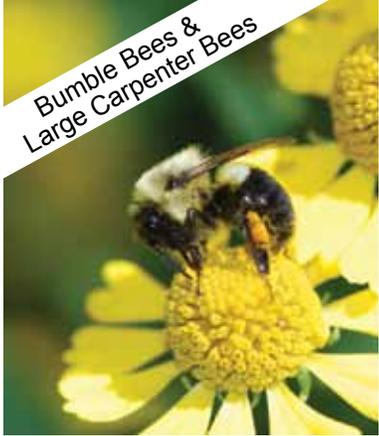
2018 Planting Guide for a Successful 3-Season Pollinator Pantry Garden

Meet the Pollinator Ambassadors

Pollinator insects and hummingbirds play an important role in our gardens and our food chain. There are many different pollinating creatures and all have their own way of carrying and transferring pollen. These primary groups are some of the easiest pollinators to attract, easiest to see, most efficient, most common, least aggressive or just fun to find and watch. Representing each group, we've nominated a Pollinator Ambassador to help introduce you to other lower profile members of its kind. Some pollinators have been studied and some we are still learning about but all are beneficial in many ways and are needed to pollinate plants and help create our food!

Below are a few of our pollinator friends and some of the plants they love! For more plant suggestions, see our expanded list at: <http://www.gatewaygardener.com/pollinators/2018-pollinator-planting-guide-expanded-plant-list>

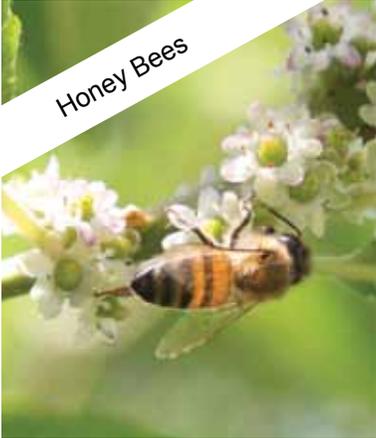
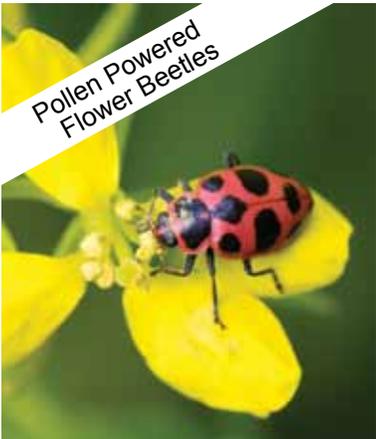
Pollinator Ambassadors	3-Season Successional Pollinator Plants	About These Pollinators
	<p>SPRING Old Fashioned Lilac (<i>Syringa vulgaris</i>) Lanceleaf coreopsis (<i>Coreopsis lanceolata</i>) Ninebark (<i>Physocarpus opulifolius</i>)</p> <p>SUMMER Swamp milkweed (<i>Asclepias incarnata</i>) Blazing star (<i>Liatris spicata</i>) Purple coneflower (<i>Echinacea purpurea</i>)</p> <p>FALL Garden phlox (<i>Phlox paniculata</i>) Smooth aster (<i>Symphotrichum laeve</i>) Upright sedum (<i>Hylotelephium spp.</i>)</p> <p>ANNUALS Bloodflower (<i>Asclepias curassavica</i>) Lantana (<i>Lantana camara</i>) Zinnia (<i>Zinnia spp.</i>)</p>	<p>All butterflies and skippers need certain food host plants while in caterpillar stage that is particular to its species. Adult butterflies and skippers have different reach capabilities to drink nectar so different nectar flowers have naturally customized shapes to "fit" different butterflies and skippers.</p> <p style="text-align: center;">The Ambassador Monarch Butterfly (<i>Danaus plexippus</i>) Caterpillars only eat milkweed (<i>Asclepias spp.</i>). Nectar feeds many adult pollinators.</p>
	<p>SPRING Eastern Bee Balm (<i>Monarda bradburiana</i>) American linden / Basswood (<i>Tilia americana</i>) Wild petunia (<i>Ruellia humilis</i>)</p> <p>SUMMER Swamp Milkweed (<i>Asclepias incarnata</i>) Blue star (<i>Amsonia spp.</i>) Sweet pepperbush (<i>Clethra alnifolia</i>)</p> <p>FALL Garden phlox (<i>Phlox paniculata</i>) Smooth aster (<i>Symphotrichum laeve</i>) Joe pye weed (<i>Eutrochium spp.</i>)</p> <p>ANNUALS Garden verbena (<i>Verbena spp.</i>) Zinnia (<i>Zinnia spp.</i>) Lantana (<i>Lantana spp.</i>)</p>	<p>Nectar moths are a group of moths that drink nectar from flowers. Some visit gardens during the day and some are more likely to visit at dawn or dusk or even at night! They are often mistaken for hummingbirds.</p> <p style="text-align: center;">The Ambassador Hummingbird Clearwing Moth (<i>Hemaris thysbe</i>) Caterpillar is camouflaged by its soft green coloring. When grown it drops to the ground and spins its cocoon, blending in with leaf litter till early spring when it becomes this charming pollinator!</p>
	<p>SPRING Indian pink (<i>Spigelia marilandica</i>) Wild columbine (<i>Aquilegia canadensis</i>) Red buckeye (<i>Aesculus pavia</i>)</p> <p>SUMMER Beardstongue (<i>Penstemon digitalis</i>) Sweet pepperbush (<i>Clethra alnifolia</i>) Buttonbush (<i>Cephalanthus occidentalis</i>)</p> <p>FALL Joe pye weed (<i>Eutrochium spp.</i>) Blue sage (<i>Salvia azurea</i>) Coral honeysuckle (<i>Lonicera sempervirens</i>)</p> <p>ANNUALS Blood flower (<i>Asclepias curassavica</i>) Hummingbird sage (<i>Salvia coccinea</i>) Bee flower (<i>Cleome serrulata</i>)</p>	<p>Hummingbirds are pollinators. They transport pollen primarily on their face and head feathers and are able to access the nectar of many deep tubular flowers.</p> <p style="text-align: center;">The Ambassador Ruby-throated Hummingbird (<i>Archilochus colubris</i>) Since the Ruby-throated hummingbird migrates and is the only reliably consistent hummingbird we have in Missouri it is its own ambassador for the Pollinator Pantry program.</p>

Pollinator Ambassadors	3-Season Successional Pollinator Plants	About These Pollinators
	<p>SPRING Willow (<i>Salix spp.</i>) Blue false indigo (<i>Baptisia australis</i>) Blueberries (<i>Vaccinium spp.</i>)</p> <p>SUMMER Downy skullcap (<i>Scutellaria incana</i>) Rose mallow (<i>Hibiscus spp.</i>) Catmint (<i>Nepeta spp.</i>)</p> <p>FALL Ironweed (<i>Vernonia spp.</i>) Upright sedum (<i>Hylotelephium spectabilis</i>) Blue sage (<i>Salvia azurea</i>)</p> <p>ANNUALS Bee flower (<i>Cleome serrulata</i>) Sunflower (<i>Helianthus annuus</i>) Partridge pea (<i>Chamaecrista fasciculata</i>)</p>	<p>Missouri has a least 6 species of bumble bees (<i>Bombus spp.</i>) each with very subtle and distinct differences. The Eastern carpenter bee (<i>Xylocopa virginica</i>) is often mistaken for a bumble bee. Both are fairly docile creatures and in general are too busy to care about people or activities in the garden.</p> <p>The Ambassador Eastern Bumble Bee (<i>Bombus impatiens</i>). Frequents flowers for nectar and pollen all season.</p>
	<p>SPRING Bellwort (<i>Uvularia grandiflora</i>) Flowering dogwood (<i>Cornus florida</i>) Spicebush (<i>Lindera benzoin</i>)</p> <p>SUMMER Orange milkweed (<i>Asclepias tuberosa</i>) Mountain mint (<i>Pycnanthemum spp.</i>) Prairie onion (<i>Allium stellatum</i>)</p> <p>FALL Orange coneflower (<i>Rudbeckia fulgida</i>) Willow-leaved Sunflower (<i>Helianthus spp.</i>) Oxeye sunflower (<i>Heliopsis spp.</i>)</p> <p>ANNUALS Lantana (<i>Lantana spp.</i>) Basil (<i>Ocimum basilicum</i>) Verbena (<i>Verbena spp.</i>)</p>	<p>Approximately 70% of bees nest in the ground. Heavy mulching in the landscape restricts nest building opportunities. Their descriptive common names such as digger bees, bunny-hole bees, leafcutter bees, mining and chimney bees used to be part of our vegetable gardening vocabulary and need to be again!</p> <p>The Ambassador Digger/Mining Bees (<i>Andrena carlini</i>) Bees emerge at times coinciding with the bloom period of their primary food flowers.</p>
	<p>SPRING Crabapple and Apple (<i>Malus spp.</i>) Wild black cherry (<i>Prunus spp.</i>) Wild geranium (<i>Geranium maculatum</i>)</p> <p>SUMMER Fennel (<i>Foeniculum spp.</i>) Anise hyssop (<i>Agastache foeniculum</i>) Swamp milkweed (<i>Asclepias incarnata</i>)</p> <p>FALL Smooth aster (<i>Symphotrichum laeve</i>) Orange coneflower (<i>Rudbeckia fulgida</i>) Ironweed (<i>Vernonia spp.</i>)</p> <p>ANNUALS Sunflower (<i>Helianthus annuus</i>) Partridge pea (<i>Chamaecrista fasciculata</i>) Basil (<i>Ocimum basilicum</i>)</p>	<p>About 30% of all bees nest in cavities, usually pre-existing cavities such as woodpecker or beetle larva holes, dead hollow or pithy plant stems, and reeds. These bees have a variety of nesting material preferences but many may consider using some homemade bee housing or some of the premade nest boxes.</p> <p>The Ambassador Blue Orchard Bee (<i>Osmia lignaria</i>). Excellent pollinator of many orchard crops as it is active during cloudy and cool weather.</p>



Certify Your Pollinator Pantry Habitat Garden

The Pollinator Pantry program is an outreach education effort of the St. Louis County Parks in partnership with Project Pollinator. Through Project Pollinator, the St. Louis County Parks and Libraries and The Butterfly House have joined together along with many other partners and sponsors to be a part of the national movement to protect pollinators and their habitats. The mission of Project Pollinator is to promote an appreciation of all pollinators through education, and the creation of healthy,

Pollinator Ambassadors	3-Season Successional Pollinator Plants	About These Pollinators
 <p>Honey Bees</p>	<p>SPRING Willow (<i>Salix spp.</i>) Lanceleaf coreopsis (<i>Coreopsis lanceolata</i>) American linden / Basswood (<i>Tilia americana</i>)</p> <p>SUMMER Orange milkweed (<i>Asclepias tuberosa</i>) Purple coneflower (<i>Echinacea purpurea</i>) Catmint (<i>Nepeta spp.</i>)</p> <p>FALL Joe pye weed (<i>Eutrochium purpureum</i>) Orange coneflower (<i>Rudbeckia fulgida</i>) Upright sedum (<i>Hylotelephium spectabilis</i>)</p> <p>ANNUALS Basil (<i>Ocimum basilicum</i>) Bloodflower (<i>Asclepias curassavica</i>) Mexican Sunflower (<i>Tithonia rotundifolia</i>)</p>	<p>In North America all honey bees are members of the same species, <i>Apis mellifera</i>, also known as the European honey bee. They differ from most other bees in that they are highly social with large numbers of bees living together and they are true pollinator generalists.</p> <p>The Ambassador European Honey Bee (<i>Apis mellifera</i>). The honey bee accounts for nearly 80% of all crops pollinated in the United States.</p>
 <p>Pollen Powered Flower Beetles</p>	<p>SPRING Flowering dogwood (<i>Cornus florida</i>) New jersey tea (<i>Ceanothus americanus</i>) Lanceleaf coreopsis (<i>Coreopsis lanceolata</i>)</p> <p>SUMMER Fennel (<i>Foeniculum vulgare</i>) Orange milkweed (<i>Asclepias tuberosa</i>) Sweetbay magnolia (<i>Magnolia virginiana</i>)</p> <p>FALL Garden phlox (<i>Phlox paniculata</i>) Garden mum-single flower (<i>Chrysanthemum spp.</i>) Orange coneflower (<i>Rudbeckia fulgida</i>)</p> <p>ANNUALS Bloodflower (<i>Asclepias curassavica</i>) Dill (<i>Anethum graveolens</i>) Basil (<i>Ocimum basilicum</i>)</p>	<p>Pollen-eating flower beetles pollinate in the process of feeding. Some have hard shells and covered wings and many have a variety of chemical defenses. The most common beetles are soldier beetles, long-horned beetles, leaf beetles and snout beetles.</p> <p>The Ambassador Pink Ladybird Beetle (<i>Coleomegilla maculata</i>). Diet is 50% pollen and nectar (pollinating in the process). A predator of many garden insect pests such as aphids.</p>
 <p>Flower Flies (Bee Mimics)</p>	<p>SPRING Lanceleaf coreopsis (<i>Coreopsis lanceolata</i>) American linden / Basswood (<i>Tilia americana</i>) Blueberries (<i>Vaccinium spp.</i>)</p> <p>SUMMER Yarrow (<i>Achillea millefolium</i>) Buttonbush (<i>Cephalanthus occidentalis</i>) Anise hyssop (<i>Agastache foeniculum</i>)</p> <p>FALL Orange coneflower (<i>Rudbeckia fulgida</i>) Upright sedum (<i>Hylotelephium spectabilis</i>) Smooth aster (<i>Symphyotrichum laeve</i>)</p> <p>ANNUALS Dill (<i>Anethum graveolens</i>) Bloodflower (<i>Asclepias curassavica</i>) Zinnia (<i>Zinnia spp.</i>)</p>	<p>Bee mimics are harmless and valuable pollinators. Although they feed on nectar and pollen like a bee they do not sting or bite. Common bee mimics are Syrphid flies, bee flies, Tachinid flies and thick-headed flies.</p> <p>The Ambassador Hover Fly (<i>Toxomeris spp.</i>). These amazing bee mimics can “bee” recognized as true flies by their single pair of wings, short antennae and fly-like compound eyes.</p>

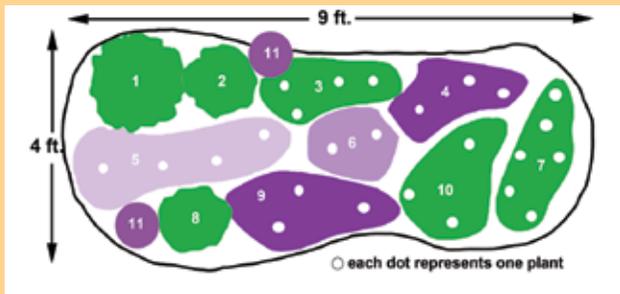
safe and nurturing pollinator gardens.

Now you can certify and register your garden as an official St. Louis County Pollinator Pantry Habitat! Help “bee” a link that connects pollinator pantry gardens together! Whether your garden is a small happy meal habitat for pollinators, a banquet for butterflies or a B&B for bees, let’s connect! Make a difference in our environment and communities! To find out more and download your Pollinator Pantry Habitat Certification form, go to: <http://www.gatewaygardener.com/pollinators/certify-your-garden>



A Simple Butterfly Berm

(courtesy Missouri Prairie Foundation GrowNative!)



1. Ninebark (*Physocarpus opulifolius*)
2. New Jersey Tea (*Ceanothus americanus*)
3. Rose Verbena (*Glandularia canadensis*)
4. Purple Coneflower (*Echinacea purpurea*)
5. Aromatic Aster (*Symphiotrichum oblongifolius*)
6. Prairie Blazing Star (*Liatris pycnostachya*)
7. Butterfly Weed (*Asclepias tuberosa*)
8. Lanceleaf Coreopsis (*Coreopsis lanceolata*)
9. Downy Phlox (*Phlox pilosa* ssp. *Ozarkana*)
10. Shining Blue Star (*Amsonia illustris*)
11. Butterfly watering hole



The Butterfly Berm is an easy family project using colorful, nectar-rich natives. Add a shallow saucer or old birdbath filled with sand, gravel and water for a butterfly “watering hole.” Berms are good design elements for an urban or suburban yard. These independent beds can be created in a day or weekend by adding a low mound of topsoil. This gives you an immediate clean slate, and the slight elevation really sets off plants, especially specimen trees.

Tips for Creating and Maintaining A Successful Pollinator Pantry Garden

- Function over fancy! When shopping for plants look for plants that are already contributing to the natural food chain. Garden Centers are basically party platters for pollinators! See who’s feeding on what!
- Know before you grow! Read plant labels for condition requirements and research where a plant grows naturally for best success!
- Most natives are nice. Plants that have evolved with the pollinators are naturally good choices. (Some aggressive natives may do too well in cultivated gardens. Notice who’s climbing out of that pot or creeping out from the bottom!)
- Mulch in moderation. Mulch deters weeds but too much mulch deters plants, too! Leave a few areas without mulch. Remember, keep some areas “bare for bees!”
- Water wisely. Be sure to check new plants frequently, water established plants during extended dry periods and always keep shallow water with pebbles and mud puddles available for pollinators and other wildlife visitors.
- Leave it lay. Let leaf litter stay in the garden over winter and delay clean up till May. Better yet “leave it lay” as much as possible.
- Make a healthy home your outdoor mindset. Your garden is your outdoor home and your habitat. Ban the use of pesticides!

Photo credits: Nectar moth by Ken Slade. Hummingbird by Larry Master, www.masterphotos.org. Ground-nesting bee, Cavity-nesting bee and Bumble bee by Ed Spevak. Pink-spotted lady beetle by Monique von Someren. Honeybee, Hover fly and Monarch butterfly by Robert Weaver.

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For more resources on attracting butterflies and other pollinators to your garden visit:
ButterflyHouse.org/ProjectPollinator

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