

Eastern Pollinator Bundle

KANSAS FOREST SERVICE

Why Pollinators?

Pollinators play an essential role in the maintenance of ecosystems and in general, the enhancement of agricultural productivity. In fact, it is estimated that one of every three mouthfuls of food is supplied by crops requiring animal pollination. Of these animals, insects are by far the most important, particularly bees. Other insects that provide pollination services include butterflies, moths, wasps, beetles, and flies.

How does it work?

The Eastern pollinator bundle is designed to improve habitat for a diverse array of pollinating insects with a primary focus on:

- Native bees, including:
 - ground-nesters (mining bees, etc.)
 - cavity-nesters (mason bees, leaf-cutter bees, etc.)
 - bumble bees (nest in insulated cavities above and below ground)
- Honey bees (*Apis mellifera*)
- Butterflies and moths (Lepidoptera)

The Eastern Pollinator Bundle is composed of seven species of shrubs and small trees as detailed on the following page. With proper site selection, these species should thrive, particularly in the Eastern half of Kansas and will provide:

- Nectar and pollen for adult butterflies, moths, bees, and other pollinating insects.
- Leaf tissue for immature butterfly/moth larvae to consume for growth and development.
- Nesting materials for cavity nesting bees in the form of pithy or hollow stems (e.g. elderberry) and shelter for adult butterflies and moths.
- Additional benefits to other forms of wildlife (songbirds, mammals, etc.)

One of the goals in developing pollinator habitat is to make floral resources available to pollinators throughout the foraging season (Figure 1). With more nectar and pollen available during the year, an increase in the abundance and diversity of pollinators will likely be seen. In addition to flowering shrubs and trees, many herbaceous native plants make excellent compliments to the pollinator bundle and help fill the floral 'gaps' that might occur between blooms. Such plants could include milkweeds (*Asclepias* spp.), blazing stars (*Liatris* spp.), coneflowers (*Echinacea* spp.), prairie clovers (*Dalea* spp.), or sage (*Salvia* spp.).

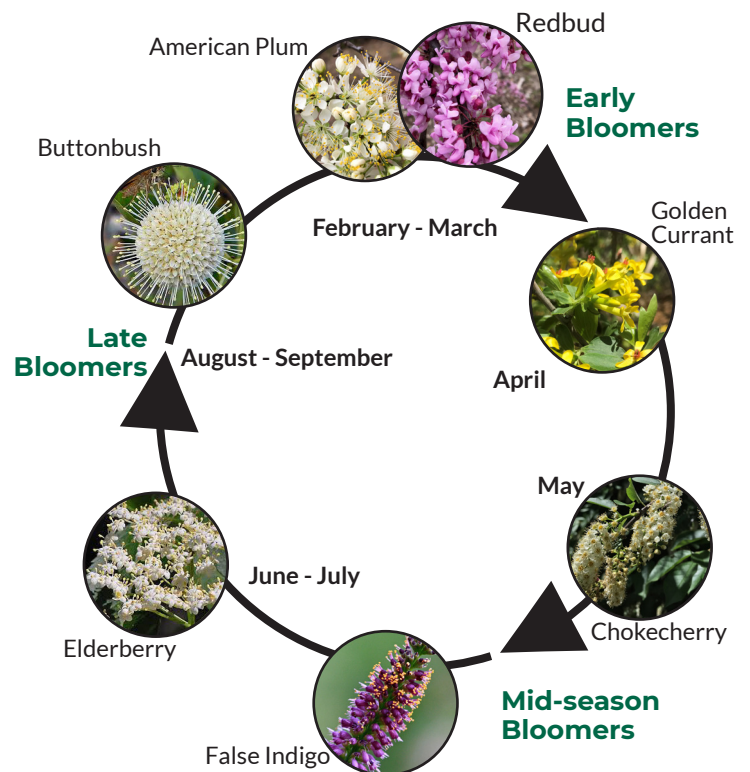


Figure 1. Providing floral resources throughout the spring, summer and fall creates a stable pollinator habitat. The species depicted are included in the Eastern Pollinator Bundle.

**Herbaceous plants are not included in the Pollinator Bundle.*

Eastern Pollinator Bundle Support and Planting Guide

	Pollinator support				Plant cultural preferences						
	Butterflies & moths			Humming-birds	Stress tolerance			Spacing information			
	Bees	Adults	Larvae		# per bundle	Flood tolerance	Drought tolerance	Shade tolerance	Height (ft.)	Spread (ft.)	
American plum					5	Low	High	Low	6-10	6-12	
Chokecherry					5	Medium	High	Medium	6-18	6-12	
Golden currant					5	Low	High	Medium	3-6	3-6	
False indigo					3	High	Medium	Low	4-6	4-6	
Elderberry					5	High	Medium	High	5-7	6-10	
Buttonbush					3	High	Medium	Low	6-15	6-10	
Eastern redbud					4	Medium	Medium	Medium	10-20	15-20	

Planning Pollinator Habitat

While there are many ways you can develop pollinator habitat on your property, there are a few important considerations to keep in mind.

Be conscious of insecticide drift - This is usually a concern along crop field margins where insecticides can move onto pollinator refuges. In these situations, position plantings along field windbreaks, which act as a drift barrier. Windbreaks also provide refuge from high winds which can restrict pollinator foraging. If insecticides must be used, apply them to crops in a manner that reduces their movement off-site.

Consider moisture needs - Plants such as false indigo, buttonbush, and elderberry tend to perform well in areas with wet soils, whereas redbud, golden currant and American plum prefer drier soils. Refer to the table above for general plant needs. Plan on irrigating the first 1-2 years until shrubs get established if there is insufficient rainfall.

Protect and create nesting sites - Tillage and mowing can damage some native bee species nesting sites. If possible, limit mowing to late fall or winter, and limit disturbance in locations where conditions are favorable for nesting (sparsely vegetated, well-drained soils). Some native bees are cavity-nesting and utilize dead stems of native shrubs like sumac, elderberry and blackberry. Nesting can be encouraged by cutting back shrub stems down to 4-6" in late spring. Nesting/overwintering habitat can also be created by piling leaves or brush in garden areas, allowing dead trees to remain standing (unless it presents a hazard), or building rock walls.

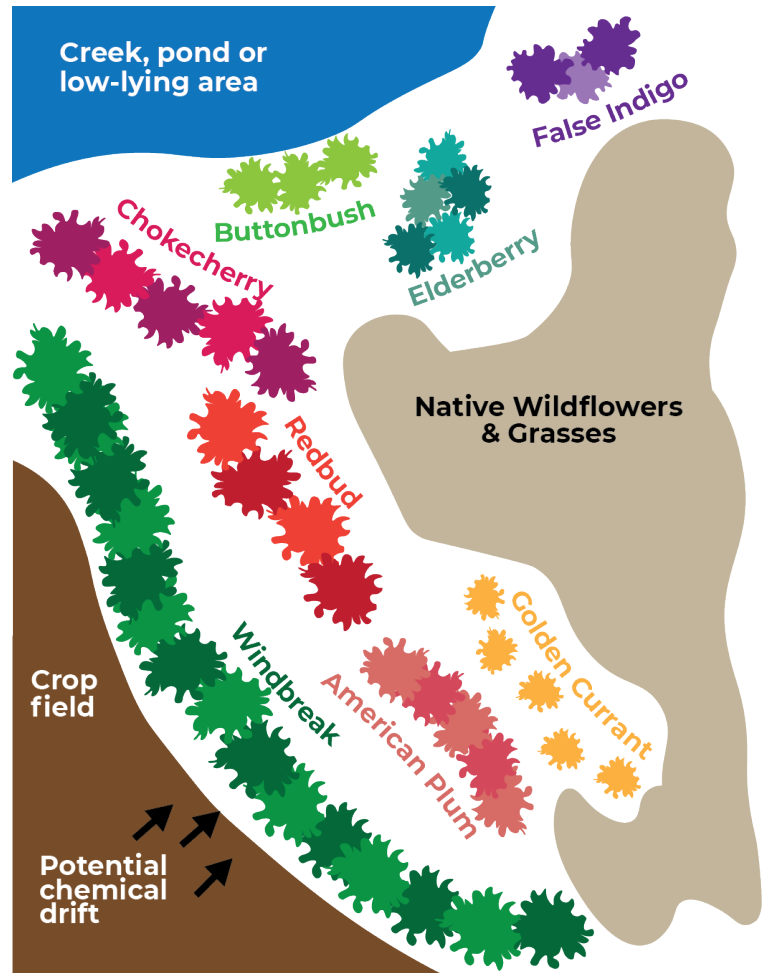


Figure 2. One possible planting design for pollinator bundle. This design would be more appropriate for a farmstead setting where pesticide drift is a concern.

Thank you to our collaborators and partners that contributed their expertise to the Eastern Pollinator Bundle:

The Xerces Society for Invertebrate Conservation - xerces.org

The USDA National Agroforestry Center - fs.usda.gov/nac/

Kansas Department of Wildlife, Parks and Tourism - ksoutdoors.com/

K-State Research and Extension - bookstore.ksre.ksu.edu/pubs/MF3290.pdf

NRCS Kansas - nrcs.usda.gov/wps/portal/nrcs/site/ks/home/

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