

Appendix – Table 2. Phenology of bee groups and plant species represented in seed mixes in Illinois. For the bee groups, x's indicate bees are active and P's indicate month of peak activity (data extracted from Roberston, 1895 from Carlinville, IL). For plants, x's indicate bloom period in Illinois (phenology data from Swink and Wilhelm, 1994). For the five species not found in Swink and Wilhelm, phenology information was obtained from other resources. The next column indicates the number of seed mixes that contained the species, out of 11 mixes total. All mixes were recommended for pollinator conservation use in Illinois (either CP42 compliant or recommended by the Xerces Society). Taxonomy follows USDA Plants database. Synonyms are indicated in parentheses if alternate names were used in seed catalogs.

The information on flower color, resources provided (N = nectar; P = pollen), and pollinators supported was extracted from Illinois Wildflowers (<http://www.illinoiswildflowers.info/index.htm>), a compendium of the flora of the state of Illinois, with descriptions of each taxon, its habitat and cultivation, faunal associations and conservation value. Visitor categories assigned by us based upon the spectrum of floral visitors associated with each species. G = Generalist pollinator, usually indicating that visitors are primarily bee species, possibly only short-tongued species (a tongue shorter than ~5.5 mm) or long-tongued (a tongue longer than 5.5 mm is a long-tongued bee), but not frequented by a broad suite of visitors. BG = Broad Generalist, which is generally visited by both long- and short-tongued bees of several genera, syrphid and other flies, wasps, butterflies, and skippers and includes species that may occasionally be visited by hummingbirds. One species was designated at a Narrow Generalist (NG) because it is known to support only a few species of *Bombus*. S = Specialists, which is used to indicate when a plant taxon has a specialist visitor or pollinator (oligolege), which is solely dependent upon the resources of this or closely related taxa in the same genus.

	April	May	June	July	Aug.	Sept.	Oct.					
Bee Group												
<i>Osmia spp.</i>	x	P	x									
<i>Adrenids</i>	x	P	x	x	x	x	x					
<i>Apids</i>	x	x	x	P	x	x	x					
<i>Mellisodes spp.</i>			x	p	x	x	x					
<i>Megachile spp.</i>			x	P	x	x	x					
<i>Bombids</i>	x	x	x	x	P	x	x					
<i>Colletes spp.</i>	x	x	x	x	x	P	x					
<i>Calliopsis spp.</i>			x	x	x	P	x					
Plant Species	April	May	June	July	Aug.	Sept.	Oct.	No. of	Flower	Visitors	Resources	Pollinators Supported

								mixes	color			
<i>Caltha palustris</i> L. (Ranunculaceae)	x	x	x	x				1	Yellow	G	N, P	Long and short-tongued bees including halictid bees, honey bees, as well as <i>Bombylius major</i> Linnaeus (Giant Bee Fly) and syrphid flies
<i>Zizia aurea</i> (L.) W.D.J. Koch (Apiaceae)	x	x	x					4	Yellow	G, S	N, P	Short-tongued bees, wasps, and flies, particularly the specialist <i>Andrena ziziae</i> Robertson; larval food for <i>Papilio</i> spp. (Swallowtail butterflies)
<i>Baptisia bracteata</i> Muhl. ex Elliott (<i>B. leucophaea</i>) (Fabaceae)		x	x					4	White	G	N, P	<i>Bombus</i> spp., <i>Synhalonia speciosa</i> Cresson (digger bee) and <i>Osmia bucephala bucephala</i> Cresson (mason bee); larval host plant for several Lepidopterans
<i>Lupinus perennis</i> L. (Fabaceae)		x	x	x				2	Blue	G	P	Long-tongue and short tongue bees; larval host plant for endangered <i>Lycaeides melissa samuelis</i> Nabokov (Karner's Blue Butterfly) and several other Lepidopterans
<i>Tradescantia ohiensis</i> Raf.		x	x	x	x			9	Blue to purple	G	N, P	Long-tongued bees, especially <i>Bombus</i> spp., halictids and

(Commelinaceae)												syrphid flies
<i>Penstemon grandiflorus</i> Nutt. (Scrophulariaceae)			x					2	Light magenta	G, S	N, P	Long-tongued bees; including <i>Osmia distincta</i> Cresson and <i>Synhalonia dubitata</i> Cresson, as well as the obligate wasp, <i>Pseudomasaris occidentalis</i> Cresson
<i>Baptisia alba</i> (L.) Vent. (Fabaceae)			x	x				2	White	G	N, P	<i>Bombus</i> spp.; larval food for some Lepidopterans
<i>Penstemon digitalis</i> Nutt. ex Sims (Scrophulariaceae)			x	x				8	White	BG	N, P	Long-tongued bees, short-tongued bees; larval food for some Lepidopterans
<i>Coreopsis lanceolata</i> L. (Asteraceae)			x	x	x			4	Yellow	BG, S	N, P	Short and long-tongued bees, including obligate <i>Melissodes coreopsis</i> Robertson; larval host for a few Lepidopterans
<i>Echinacea pallida</i> (Nutt.) Nutt. (Asteraceae)			x	x	x			7	Light purple	G	N, P	Long-tongued bees, butterflies, short-tongued bees; larval host for a few Lepidopterans
<i>Amorpha canescens</i>			x	x	x			3	Light to	G	N, P	Long- and short-tongued bees, including bumble bees, wasps

Pursh (Fabaceae)									dark purple			and the specialist, <i>Andrena quintilis</i> Robertson (andrenid)
<i>Asclepias incarnata</i> L. (Asclepiadaceae)			x	x	x			3	Pink	BG	N	Visited by many species of short- and long-tongued bees, wasps, flies, butterflies and occasionally hummingbirds
<i>Ruellia humilis</i> Nutt. (Acanthaceae)			x	x	x			1	Light purple	G	N, P	Long-tongued bees; leaf cutter bees use leaves to construct nests; occasional larval food for <i>Junonia coenia</i> Hübner (Common Buckeye Butterfly)
<i>Lythrum alatum</i> Pursh (Lythraceae)			x	x	x	x		1	Light purple	BG	N, P	Long- and short-tongued bees
<i>Oligoneuron ohioense</i> (Frank ex Riddell) G.N. Jones (<i>Solidago ohioensis</i>) (Asteraceae)			x	x	x	x		1	Yellow	BG	N, P	Long-tongued bees, ants, beetles, moths and butterflies; larval food for many moths
<i>Silphium laciniatum</i> L. (Asteraceae)			x	x	x	x		1	Yellow	BG	N, P	Short- and long-tongued bees; occasional butterflies
<i>Verbena stricta</i> Vent.			x	x	x	x		6	Purple	BG	N, P	Long-tongued bees, halictids, thread-waisted wasps, bee flies,

(Verbenaceae)												thick-headed flies, butterflies, and skippers; larval host of at least one Lepidopteran
<i>Parthenium integrifolium</i> L. (Asteraceae)			x	x	x	x		1	White	BG	N, P	Short-tongued bees, particularly halictids, wasps, many species of flies, and beetles
<i>Rudbeckia hirta</i> L. (Asteraceae)			x	x	x	x	x	5	Yellow and brown	BG	N, P	Short- and long-tongued bees, beetles, wasps and flies, some butterflies; larval food for <i>Chlosyne nycteis</i> Doubleday & Hewitson (Silvery Checkerspot)
<i>Hypericum prolificum</i> L. (Clusiaceae)				x				1	Yellow	G	P	<i>Bombus</i> spp., syrphid flies and halictid bees; larval food for <i>Strymon melinus</i> Hübner (Gray Hairstreak)
<i>Rosa setigera</i> Michx. (Rosaceaea)				x				1	Light pink to rosy pink	G	P	Long- and short-tongued bees, including bombids and halictids, and syrphid flies
<i>Asclepias syriaca</i> L. (Asclepiadaceae)				x	x			6	Light pink to purple	BG	N	Long-tongued bees, wasps, flies, skippers, and butterflies, and sphynx moths; larval food for <i>Danaus plexippus</i> Linnaeus (Monarch Butterfly) and several

												other Lepidopterans
<i>Asclepias tuberosa</i> L. (Asclepiadaceae)				x	x			6	Orange	BG	N	Long- and short-tongued bees, including honeybees, <i>Melissodes</i> spp., <i>Megachile</i> spp., halictid bees, thread-waisted wasps, other sphecid wasps, butterflies, and the ruby throated hummingbird; larval food for some Lepidopterans including <i>Danaus plexippus</i> (Monarch Butterfly)
<i>Desmodium illinoense</i> A. Gray (Fabaceae)				x	x			1	Light purple	G	P	Long-tongued bees, especially <i>Bombus</i> spp.; larval food for several species of moths and skippers
<i>Echinacea purpurea</i> (L.) Moench (Asteraceae)				x	x			4	Purple	G	N	Long-tongued bees including honeybees, bumblebees, <i>Melissodes</i> spp., and <i>Megachile</i> spp., bee flies, some halictids, and several Lepidopterans; larval food for several Lepidopterans
<i>Eutrochium purpureum</i> (L.) E.E. Lamont (<i>Eupatorium</i>				x	x			1	Pale pink	G	N, P	Long-tongued bees including <i>Bombus</i> spp., <i>Melissodes</i> spp., and <i>Megachile</i> spp., butterflies, skippers, and moths; larval food

<i>purpureum</i> (Asteraceae)												for several moth species
<i>Veronicastrum virginicum</i> (L.) Farw. (Scrophulariaceae)				x	x			9	White	BG	N, P	Long-tongued and short-tongued bees, sphecid wasps, butterflies, moths, and syrphid flies
<i>Senna hebecarpa</i> (Fernald) Irwin & Barneby (<i>Cassia hebecarpa</i>) (Fabaceae)				x	x			2	Yellow	G	P	<i>Bombus</i> spp. and halictid bees; larval food for sulfur butterflies, including <i>Eurema nicippe</i> Cramer (Sleepy Orange)
<i>Allium cernuum</i> Roth (Liliaceae)				x	x	x		3	White, lavender, or pink	G	N, P	Honeybees, bumblebees, anthophorine bees (<i>Anthophora</i> spp.), and halictid bees (<i>Lasioglossum</i> spp.)
<i>Astragalus canadensis</i> L. (Fabaceae)				x	x	x		1	Cream, with yellow or green tints.	G	N	Primarily <i>Bombus</i> spp. and other long-tongued bees
<i>Chamaecrista fasciculata</i> (Michx.) Greene (Fabaceae)				x	x	x		7	Yellow	G	P	Long-tongued bees including honeybees, <i>Bombus</i> spp., <i>Melissodes</i> spp., <i>Megachile</i> spp.; petiolar nectaries attract different insects, including halictid bees,

												wasps, flies, and ants; larval food for sulfur butterflies including <i>Eurema lisa</i> Boisduval & LeConte (Little Sulfur), <i>Eurema nicippe</i> (Sleepy Orange)
<i>Dalea candida</i> Michx. ex Willd. (Fabaceae)				x	x	x		5	White	BG, S	N, P	Bumblebees, halictid bees, plasterer bees (<i>Colletes spp.</i>), sphecid wasps, tiphid wasps, syrphid flies, thick-headed flies, and small butterflies; two oligolectic bees, <i>Colletes robertsonii</i> Dalla Torre and <i>Colletes wilmattae</i> Cockerell; larval food for a few Lepidopterans including <i>Colias cesonina</i> Stoll (Dogface Sulphur)
<i>Dalea purpurea</i> Vent. (Fabaceae)				x	x	x		8	Purple	BG, S	N, P	Long- and short-tongued bees, as well as sphecid wasps, tiphid wasps, syrphid flies, bee flies, thick-headed flies; small butterflies, skippers, and beetles; several species of plasterer bees are specialists of <i>Dalea spp.</i> : <i>Colletes albescens</i> Cresson, <i>Colletes robertsonii</i> , <i>Colletes susanna</i> Swenk, and <i>Colletes</i>

												<i>wilmatta</i>
<i>Eryngium yuccifolium</i> Michx. (Apiaceae)				x	x	x		5	White/light green	BG, S	N, P	Long and short-tongued bees, wasps, flies, butterflies, skippers, and moths; larval food for a rare moth
<i>Heliopsis</i> <i>helianthoides</i> (L.) Sweet (Asteraceae)				x	x	x		1	Yellow	BG	N, P	Long- and short-tongued bees, as well as wasps, skippers, moths and butterflies
<i>Desmodium</i> <i>canadense</i> (L.) DC. (Fabaceae)				x	x	x		4	Pink	G	P	Long-tongued bees, including <i>Bombus</i> spp., <i>Melissodes</i> spp., and <i>Megachile</i> spp.; larval food for moths and skippers such as <i>Thorybes bathyllus</i> J.E. Smith (Southern Cloudywing) and <i>Thorybes pylades</i> Scudder (Northern Cloudywing); and two butterflies, <i>Everes comyntas</i> Godart (Eastern Tailed Blue) and <i>Strymon melinus</i> Hübner (Gray Hairstreak)
<i>Helianthus giganteus</i> L. (Asteraceae)				x	x	x		1	Yellow	G	N, P	Several long-tongued bees, including <i>Bombus</i> spp., some short-tongued bees, syrphid flies and butterflies; occasional larval

												food for <i>Chlosyne nycteis</i> Doubleday & Hewitson (Silvery Checkerspot) and <i>Vanessa cardui</i> Linnaeus (Painted Lady)
<i>Helianthus pauciflorus</i> Nutt. (Asteraceae)				x	x	x		1	Yellow	BG	N, P	Short- and long-tongued bees; flies, wasps, butterflies, moths and skippers; larval food for <i>Chlosyne nycteis</i> (Silvery Checkerspot) and <i>Vanessa cardui</i> (Painted Lady)
<i>Liatris spicata</i> (L.) Willd. (Asteraceae)				x	x	x		4	Pink to purple	G	N, P	Several species of long-tongued bees including <i>Bombus</i> ; a few short-tongued bees; larval food source for some uncommon moths
<i>Liatris squarrosa</i> (L.) Michx. (Asteraceae)				x	x	x		1	Pink to purple	NG	N	<i>Bombus</i> spp., butterflies, and skippers; larval food for several moths
<i>Monarda fistulosa</i> L. (Lamiaceae)				x	x	x		10	Lavender to pink	BG	N	Long- and short-tongued bees, wasps, flies, skippers, butterflies, moths, and hummingbirds; larval food for a few Lepidoptera including <i>Sphinx eremitus</i> Hübner (Hermit Sphinx)

<i>Pycnanthemum virginianum</i> (L.) T. Dur. & B.D. Jacks. ex B.L. Rob. & Fernald (Lamiaceae)				x	x	x		4	White	BG	N	Short- and long-tongued bees, wasps, flies, and small butterflies, including honeybees, cuckoo bees, halictid bees, sphecid wasps, eumenine wasps, bee flies, beetles, and <i>Phyciodes tharos</i> Drury (Pearl Crescent butterfly)
<i>Solidago juncea</i> Aiton (Asteraceae)				x	x	x		1	Yellow	BG	N, P	Long-tongued and short-tongued bees, wasps, flies, butterflies, moths, and beetles, including <i>Chauliognathus pennsylvanicus</i> De Geer (Goldenrod Soldier Beetle)
<i>Verbena hastata</i> L. (Verbenaceae)				x	x	x		1	Blue violet	BG	N, P	Short- and long-tongued bees, including the oligolectic <i>Calliopsis verbenae</i> Cockerell (Verbena Bee); sphecid wasps, vespid wasps, syrphid flies, bee flies (<i>Exoprosopa</i> spp.), thick-headed flies (<i>Physocephala</i> spp.), small butterflies, skippers, and moths; larval food for a few moth species
<i>Vernonia fasciculata</i>				x	x	x		3	Purple to	G, S	N, P	Long-tongued bees, butterflies,

Michx. (Asteraceae)									magenta			and skippers, with one oligolectic bee (<i>Melissodes vernoniae</i> Robertson); larval food for several moths including <i>Carmenta bassiformis</i> Walker (Eupatorium Borer Moth) and some <i>Polygrammodes</i> spp. (Pyralid Moths)
<i>Vernonia missurica</i> Raf. (Asteraceae)				x	x	x		1	Magenta	G	N, P	Long-tongued bees, butterflies, and skippers; larval food for several moths
<i>Solidago speciosa</i> Nutt. (Asteraceae)				x	x	x	x	4	Yellow	G	N	Long-tongued bees including honeybees and <i>Bombus</i> spp., occasional moths or butterflies; larval food for variety of lepidopterans
<i>Ratibida pinnata</i> (Vent.) Barnhart (Asteraceae)				x	x	x	x	5	Yellow	BG	N, P	Long- and short-tongued bees, wasps, flies, butterflies and moths; larval food for the butterfly <i>Chlosyne nycteis</i> (Silvery Checkerspot); and two species of moths
<i>Liatris aspera</i> Michx. (Asteraceae)				x	x	x	x	2	Pink to lavender	G	N, P	Long-tongued bees, butterflies and skippers; larval food for a rare moth

<i>Monarda punctata</i> L. (Lamiaceae)				x	x	x	x	2	Pink, lavender, or nearly white	G	N, P	Long- and short-tongued bees, including <i>Melissodes spp.</i> , and <i>Colletes spp.</i> ; butterflies including <i>Lycaeides melissa samuelis</i> (Karner Blue)
<i>Scrophularia marilandica</i> L. (Scrophulariaceae)				x	x	x	x	1	Maroon	BG	N, P	Long- and short tongued bees, halictid bees, vespid wasps (<i>Polites spp.</i> , <i>Vespula spp.</i>), various eumenine wasps, ruby- throated hummingbird
<i>Silphium perfoliatum</i> L. (Asteraceae)				x	x	x	x	3	Yellow	G	N	Long- and short-tongued bees, wasps, flies, butterflies, and skippers
<i>Oenothera gaura</i> W.L. Wagner & Hoch (<i>Gaura biennis</i>) (Onagraceae)					x			1	Pink	G	N	Long-tongued bees and nectar- seeking moths; larval food for a few moths
<i>Agastache foeniculum</i> (Pursh) Kuntze (Lamiaceae)					x	x		4	Purple	G, S	N, P	Long-tongued bees, some short- tongued bees, one oligoletic bee, <i>Dufourea monardae</i> Viereck
<i>Euthamia graminifolia</i> L. Nutt.					x	x		1	Yellow	BG	N, P	Long- and short-tongued bees, wasps, flies, butterflies, and

<i>(Solidago graminifolia)</i> (Asteraceae)												moths
<i>Lespedeza capitata</i> Michx. (Fabaceae)					x	x		2	White	BG	N	Long- or short-tongued bees, butterflies; larval food for several species of skippers and moths
<i>Liatris ligulistylis</i> (A. Nelson) K. Schum. (Asteraceae)					x	x		1	Pink to lavender	BG	N, P	Long-tongued bees, flies and butterflies including monarchs; larval food for a few moths
<i>Liatris pycnostachya</i> Michx. (Asteraceae)					x	x		3	Pink to purplish-pink	BG	N, P	Long-tongued bees, short-tongued bees, butterflies; larval food for a rare moth
<i>Rudbeckia subtomentosa</i> Pursh (Asteraceae)					x	x		1	Yellow	BG, S	N, P	Long- and short-tongued bees, small- to medium-sized butterflies, skippers; larval food for the butterfly <i>Chlosyne nycteis</i> (Silvery Checkerspot), as well as several species of moths
<i>Rudbeckia triloba</i> L. (Asteraceae)					x	x		2	Yellow	BG	N, P	Short- and long-tongued bees, flies, wasps, butterflies and skippers, including the specialist, <i>Andrena rudbeckiae</i> Robertson

<i>Symphotrichum laeve</i> (L.) Á. Löve & D. Löve (<i>Aster laevis</i>) (Asteraceae)					x	x	x	6	Pale lavender	BG	N, P	Short- and long-tongued bees, as well as sphecid wasps, flies, butterflies and skippers; larval food for <i>Phyciodes tharos</i> (Pearl Crescent) butterfly
<i>Symphotrichum novae-angliae</i> (L.) G.L. Nesom (<i>Aster novae-angliae</i>) (Asteraceae)					x	x	x	5	Yellow and purple to lavender	G	N, P	Long-tongued bees, bee flies, butterflies, skippers and short-tongued bees
<i>Cirsium discolor</i> (Muhl. ex Willd.) Spreng. (Asteraceae)					x	x	x	2	Light pink	G	N, P	Long-tongued bees such as bumblebees, <i>Melissodes spp.</i> (including specialist <i>Melissodes desponsa</i> Smith), <i>Megachile spp.</i> , and butterflies; larval food for <i>Vanessa cardui</i> (Painted Lady) and several species of moths
<i>Helenium autumnale</i> L. (Asteraceae)					x	x	x	1	Yellow	G	N, P	Long-tongued bees, including honeybees, bumblebees, <i>Melissodes spp.</i> , cuckoo bees (<i>Coelioxys spp.</i> , <i>Tripeolus spp.</i>), <i>Megachile spp.</i> ; also halictid bees, sphecid wasps, vespids

												wasps, syrphid flies, and butterflies
<i>Helianthus x laetiflorus</i> Pers. (pro sp.) (Asteraceae)					x	x	x	1	Yellow	G	--	Specific visitors unavailable, however the Xerces Society considers this taxa as “beneficial to native bees”
<i>Lobelia siphilitica</i> L. (Campanulaceae)					x	x	x	2	Blue violet	BG	N, P	Bumblebees and other long-tongued bees (<i>Anthophora spp.</i> , <i>Melissodes spp.</i> , <i>Svastra spp.</i>); hummingbirds, large butterflies; larval food for a moth
<i>Oligoneuron rigidum</i> (L.) Small (<i>Solidago rigida</i>) (Asteraceae)					x	x	x	6	Yellow	BG	N, P	Long- and short-tongued bees, wasps, flies, butterflies; larval food for several species of moths
<i>Symphotrichum ericoides</i> (L.) G.L. Nesom (<i>Aster ericoides</i>) (Asteraceae)					x	x	x	1	White	BG	N, P	Long-tongued bees, short-tongued bees, wasps, flies, butterflies, skippers, and moths; larval food for <i>Chlosyne nycteis</i> (Silvery Checkerspot) and several species of moths
<i>Symphotrichum lateriflorum</i> (L.) Á.					x	x	x	1	White	BG	N, P	Short-tongued bees, wasps, and flies; long-tongued bees, small butterflies and skippers; larval

Löve & D. Löve <i>(Aster lateriflorum)</i> (Asteraceae)												food for two butterflies, <i>Chlosyne nycteis</i> (Silvery Checkerspot) and <i>Phyciodes tharos</i> (Pearl Crescent), and several moth species
<i>Symphotrichum oolentangiense</i> (Riddell) G.L. Nesom <i>(Aster azureus)</i> (Asteraceae)					x	x	x	5	Lavender to light blue	G, S	N, P	Long-tongued bees; several specialists of asters (<i>Symphotrichum spp.</i>) and related composites include <i>Andrena asteris</i> Robertson, <i>Andrena nubecula</i> Smith, <i>Andrena simplex</i> Smith, <i>Colletes simulans armata</i> Patton, and <i>Melissodes dentiventris</i> Smith; larval food for <i>Chlosyne nycteis</i> (Silvery Checkerspot) and <i>Phyciodes tharos</i> (Pearl Crescent), and several species of moths
<i>Verbesina alternifolia</i> (L.) Britton ex Kearney (<i>Actinomeris alternifolia</i>) (Asteraceae)					x	x	x	2	Yellow	G	N, P	Long-tongued bees, especially bumblebees, some short-tongued bees, butterflies, and skippers

<i>Pycnanthemum verticillatum</i> (Michx.) Pers. var. <i>pilosum</i> (Nutt.) Cooperr. (<i>P. pilosum</i>) (Lamiaceae)						x		1	White	BG	N	Long- and short-tongued bees, wasps, flies, butterflies and skippers
<i>Oligoneuron riddellii</i> (Frank ex Riddell) Rydb. (<i>Solidago riddellii</i>) (Asteraceae)						x	x	1	Yellow	G	--	Specific visitors unavailable, however the Xerces Society considers this taxa as “beneficial to native bees”