



# The Bee & Butterfly Habitat Fund

## Kansas Monarch Mixture

Fall 2022

Species	Scientific Name	PLS lbs per acre	Seeds per sq ft	% of Mixture	Bloom Period	Pollinator Value
Big Bluestem, Pawnee	<i>Andropogon gerardii</i>	0.150	0.50	1.47%	--	--
Canada Wildrye	<i>Elymus canadensis</i>	0.200	0.52	1.55%	--	--
Little Bluestem, VNS	<i>Schizachyrium scoparium</i>	0.200	1.11	3.27%	--	--
Plains Oval Sedge, Native Source	<i>Carex brevior</i>	0.060	0.89	2.64%	--	--
Sideoats Grama, Butte	<i>Bouteloua curtipendula</i>	0.300	1.10	3.24%	--	--
Western Wheatgrass, Barton	<i>Elymus smithii</i>	0.400	1.05	3.09%	--	--
Anise Hyssop	<i>Agastache foeniculum</i>	0.035	1.16	3.42%	3	5
Ashy Sunflower, Native Source	<i>Helianthus mollis</i>	0.030	0.14	0.41%	3	5
Blackeyed Susan	<i>Rudbeckia hirta</i>	0.050	1.81	5.35%	2	1
Blacksamson, Native Source	<i>Echinacea angustifolia</i>	0.010	0.06	0.17%	2	5
Blanketflower, ( <i>pulchella</i> )	<i>Gaillardia pulchella</i>	0.250	1.07	3.17%	1	4
Blue Vervain, Native Source	<i>Verbena hastata</i>	0.025	0.86	2.55%	2	5
Bush Morning Glory, Native Source	<i>Ipomoea leptophylla</i>	0.015	0.00	0.00%	2	3
Butterfly Milkweed	<i>Asclepias tuberosa</i>	0.020	0.03	0.10%	2	5
Canada Goldenrod, Native Source	<i>Solidago canadensis</i>	0.004	0.65	1.93%	2	5
Canada Milkvetch	<i>Astragalus canadensis</i>	0.080	0.50	1.47%	2	4
Canada Tick-trefoil	<i>Desmodium canadense</i>	0.050	0.10	0.30%	2	5
Candle Anemone, Native Source	<i>Anemone cylindrica</i>	0.005	0.05	0.14%	2	1
Clasping Coneflower	<i>Rudbeckia amplexicaulis</i> or <i>Dracopis amplexicaulis</i>	0.050	1.84	5.44%	1	2
Common Evening Primrose	<i>Oenothera biennis</i>	0.035	1.11	3.27%	2	4
Common Milkweed, Native Source	<i>Asclepias syriaca</i>	0.040	0.08	0.22%	2	5
Compass Plant	<i>Silphium laciniatum</i>	0.030	0.01	0.02%	2	5
Cup Plant, Native Source	<i>Silphium perfoliatum</i>	0.030	0.04	0.13%	2	5
Deer Vetch, Native Source	<i>Acmispon americanus</i> or <i>Lotus unifoliolatus</i>	0.025	0.04	0.12%	3	4
Dotted Mint	<i>Monarda punctata</i>	0.010	0.34	1.00%	2	4
Entire-leaved Rosinweed, Native Source	<i>Silphium integrifolium</i>	0.025	0.02	0.06%	2	5
False Boneset	<i>Brickellia eupatorioides</i>	0.015	0.18	0.53%	3	3
False or Oxeye Sunflower	<i>Heliopsis helianthoides</i>	0.100	0.24	0.71%	2	5
Four-point Evening Primrose, Native Source	<i>Oenothera rhombipetala</i>	0.015	0.87	2.56%	2	4
Foxglove Beardstongue, Native Source	<i>Penstemon digitalis</i>	0.020	0.18	0.54%	1	5
Golden Alexander	<i>Zizia aurea</i>	0.025	0.10	0.30%	1	5
Grayhead Coneflower	<i>Ratibida pinnata</i>	0.070	0.69	2.03%	2	4
Heath Aster	<i>Symphotrichum ericoides</i>	0.006	0.69	2.06%	3	5
Hoary Vervain, Native Source	<i>Verbena stricta</i>	0.020	0.27	0.80%	2	5
Hoary Vetchling, Native Source	<i>Lathyrus polymorphus</i>	0.008	0.00	0.00%	1	5
Illinois Bundleflower	<i>Desmanthus illinoensis</i>	0.250	0.49	1.44%	2	5
Ironweed	<i>Vernonia fasciculata</i>	0.015	0.13	0.39%	2	5
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>	0.200	1.01	3.00%	2	4
Late or Giant Goldenrod, Native Source	<i>Solidago gigantea</i>	0.007	1.22	3.60%	3	5
Lemon Mint or Lemon Bee Balm	<i>Monarda citriodora</i>	0.050	1.65	4.89%	2	3
Maximilian Sunflower	<i>Helianthus maximiliani</i>	0.055	0.25	0.73%	3	5
Missouri Goldenrod, Native Source	<i>Solidago missouriensis</i>	0.006	0.87	2.57%	2	5
New England Aster	<i>Symphotrichum novae-angliae</i>	0.010	0.24	0.72%	3	5
Pale Purple Coneflower	<i>Echinacea pallida</i>	0.050	0.12	0.36%	2	5
Pitcher Sage	<i>Salvia azurea</i>	0.015	0.10	0.31%	3	5
Plains Coreopsis	<i>Coreopsis tinctoria</i>	0.020	1.48	4.38%	2	2
Plains Sunflower, Native Source	<i>Helianthus petiolaris</i>	0.050	0.13	0.39%	3	5
Prairie Cinquefoil	<i>Drymocallis arguta</i>	0.003	0.30	0.90%	2	3
Purple Coneflower	<i>Echinacea purpurea</i>	0.180	0.48	1.41%	2	5
Purple Prairieclover	<i>Dalea purpurea</i>	0.050	0.36	1.08%	2	5
Rough Gayfeather, Native Source	<i>Liatris aspera</i>	0.010	0.06	0.19%	3	5
Rough Purple Gerardia, Native Source	<i>Agalinis aspera</i>	0.005	0.24	0.72%	2	4
Roundhead Lespedeza, Native Source	<i>Lespedeza capitata</i>	0.030	0.12	0.35%	3	4
Sand Milkweed, Native Source	<i>Asclepias arenaria</i>	0.015	0.02	0.05%	2	5
Sawtooth Sunflower, Native Source	<i>Helianthus grosseserratus</i>	0.008	0.12	0.34%	3	5
Sensitive Briar, Native Source	<i>Mimosa nuttallii</i>	0.020	0.02	0.06%	2	3
Shell-leaf Penstemon, Native Source	<i>Penstemon grandiflorus</i>	0.020	0.10	0.29%	1	5
Showy Goldenrod	<i>Solidago speciosa</i>	0.006	0.59	1.75%	3	5
Showy Partridgepea	<i>Chamaecrista fasciculata</i>	0.350	0.52	1.55%	2	5
Slender Beardstongue, Native Source	<i>Penstemon gracilis</i>	0.003	0.74	2.20%	2	5
Smooth Blue Aster	<i>Aster laevis</i>	0.010	0.23	0.69%	3	5
Stiff Goldenrod, Native Source	<i>Solidago rigida</i>	0.010	0.15	0.46%	3	5
Stiff Sunflower, Native Source	<i>Helianthus pauciflorus</i>	0.015	0.25	0.75%	2	4
Sullivant's Milkweed, Native Source	<i>Asclepias sullivantii</i>	0.005	0.01	0.02%	2	5
Swamp Milkweed, Native Source	<i>Asclepias incarnata</i>	0.010	0.04	0.10%	2	5
Tall Boneset, Native Source	<i>Eupatorium altissimum</i>	0.008	0.15	0.43%	3	4
Tube Penstemon, Native Source	<i>Penstemon tubaeiflorus</i>	0.015	0.44	1.30%	2	5

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Upright Coneflower	<i>Ratibida columnifera</i>	0.060	1.02	3.00%	2	2
Velvety Gaura, Native Source	<i>Oenothera curtiflora</i>	0.010	0.01	0.04%	2	2
Western Yarrow	<i>Achillea millefolium</i>	0.010	0.65	1.94%	1	2
White Prairieclover	<i>Dalea candidum</i>	0.060	0.42	1.24%	2	5
Wild Bergamot	<i>Monarda fistulosa</i>	0.025	0.73	2.16%	2	5
Willow-leaf Sunflower, Native Source	<i>Helianthus salicifolius</i>	0.020	0.03	0.10%	3	5
Rice Hulls - Filler for low planting rate mixtures		3.000	0.00	0.00%	--	--
Grasses Total:		1.310	5.160	15.27%		
Wildflower/Forb/Legume Total:		2.784	28.630	84.73%		
Filler Total:		3.000	0.000	0.00%		
<b>Total Mixture:</b>		<b>7.094</b>	<b>33.791</b>	<b>100.00%</b>		

Bloom Period	Wildflowers Used in Mixture	% PLS Seeding Rate of Mix
1 = April to May	7	11.68%
2 = June to July	42	56.46%
3 = August to October	18	16.59%
<b>Total :</b>	<b>67</b>	

4.33	Pollinator Value (0-5)
<p>The Pollinator value score is determined based on a combination of factors described below. A score greater than 4.0 indicates the mixture is designed for great pollinator value.</p>	

**The Pollinator Value Score is determined based on a combination of factors that include:**

- The pollen and/or nectar value of the plant species.
- The ability of the plant species to establish and persist in pollinator seeding mixtures.
- Bee Integrated Program research results of pollinator pollen analysis.
- Unique pollinator biological life histories of the plant species.
- The total bloom period length of the plant species.
- The occurrence in early bloom periods (Bloom Period 1) that are hard to challenging to provide resources for.
- The commercial availability of the species for use in seeding mixtures.
- Value of the plant species pollen and nectar to commercial beekeepers.
- USGS Pollinator Library tool: <https://www.npwrc.usgs.gov/pollinator/home>
- The Ecoregional Revegetation Application tool: <http://www.nativerivegetation.org/era/>
- Botanical and beekeeping reference materials that list the pollinator value of species.
- Field observations of floral resource use by pollinator species.