



Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Important Plants of the Monarch Butterfly

SOUTHERN HIGH PLAINS REGION

STAFF GUIDE • JULY 2024



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PREFACE

The *Monarch Butterfly Wildlife Habitat Evaluation Guide* (WHEG) and *Decision Support Tool: Southern High Plains Region* is used by NRCS staff as a planning tool to evaluate current habitat conditions at the assessment area scale, not at a farm or ranch scale. Following the assessment, a rating (poor, medium, good, or excellent) is assigned to each assessment area within the farm or ranch.

These ratings (benchmark monarch habitat conditions rating) are used to recommend monarch habitat improvement alternatives for each assessment area, and to predict improvement of habitat following implementation of alternatives (planned monarch habitat conditions rating). The WHEG can also be applied to areas after conservation practice installation to determine improvement in habitat condition (applied monarch habitat condition rating).

An essential function of the Monarch WHEG is inventorying the current plant community. The proper identification of key monarch plant species is required when inventorying vegetation within the assessment area. Vegetation inventory is completed using a series of belt transects. The WHEG transect protocol can also be applied to determine planting success. To support the WHEG and assist in the development of planning, NRCS has developed this appendix to the WHEG. This appendix contains three different technical support documents to assist staff in Colorado, Kansas, New Mexico, Oklahoma, and Texas in making informed decisions. These documents are:

Monarch Planting List: Provides key plant species for establishing a quality monarch habitat planting mix.

Monarch WHEG Inventory Plant List: Provides the plant species that will be identified and measured (percent cover) during the habitat evaluation (vegetative sampling effort within the belt transect).

Plant Identification Guide: Provides a plant identification sheet for each species from the planting and WHEG lists.



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<i>Asclepias incarnata</i> (Swamp Milkweed)	120
<i>Asclepias latifolia</i> (Broadleaf Milkweed)	28
<i>Asclepias oenotheroides</i> (Zizotes Milkweed)	134
<i>Asclepias speciosa</i> (Showy Milkweed)	100
<i>Asclepias stenophylla</i> (Slimleaf Milkweed)	102
<i>Asclepias subverticillata</i> (Horsetail Milkweed)	60
<i>Asclepias tuberosa</i> (Butterfly Milkweed)	30
<i>Centaurea americana</i> (Basket Flower)	24
<i>Cirsium undulatum</i> (Wavyleaf thistle)	122
<i>Dalea candida</i> (White Prairie Clover)	128
<i>Dalea multiflora</i> (Roundhead Prairie clover)	92
<i>Dalea purpurea</i> (Purple Prairie Clover)	88
<i>Echinacea angustifolia</i> (Narrowleaf Purple Coneflower)	72
<i>Engelmannia peristenia</i> (Engelmann's Daisy)	46
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<i>Gaillardia suavis</i> (Perfumeballs)	82
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<i>Grindelia papposa</i> (Spanish Gold)	112
<i>Helenium amarum</i> (Sneezeweed)	108
<i>Helianthus annuus</i> (Common Sunflower)	38
<i>Helianthus grosseserratus</i> (Sawtooth Sunflower)	98
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<i>Heliopsis helianthoides</i> (Smooth Oxeye)	106
<i>Liatris punctata</i> (Dotted Blazing Star)	42
<i>Lithospermum incisum</i> (Narrowleaf Stoneseed)	74
<i>Monarda citriodora</i> (Lemon Beebalm)	68
<i>Monarda fistulosa</i> (Wild Bergamot)	130
<i>Monarda punctata</i> (Spotted Beebalm)	114
<i>Oligoneuron rigidum</i> (Stiff Goldenrod)	116
<i>Onosmodium bejariense</i> (Soft-hair Marbledseed)	110
<i>Packera plattensis</i> (Prairie groundsel)	84
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<i>Prunus americana</i> (American plum)	16
<i>Prunus angustifolia</i> (Chickasaw plum)	34
<i>Ribes aureum</i> (Golden currant)	54
<i>Rudbeckia hirta</i> (Blackeyed Susan)	26
<i>Solidago canadensis</i> (Canada Goldenrod)	32
<i>Solidago nemoralis</i> (Gray Goldenrod)	56
<i>Solidago petiolaris</i> (Downy Ragged Goldenrod)	44
<i>Symphotrichum ericoides</i> (White Heath Aster)	126
<i>Symphotrichum laeve</i> (Smooth Blue Aster)	104
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<i>Symphotrichum oblongifolium</i> (Aromatic Aster)	20
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INTRODUCTION

Understanding the breeding and feeding behaviors of larval and adult monarch butterflies (*Danaus plexippus*) is essential to conducting an evaluation of the quality of monarch butterfly habitat. The data obtained from the application of the assessment portion (WHEG) of the *Monarch Butterfly Wildlife Habitat Evaluation Guide and Decision Support Tool: Southern High Plains Edition* (Fig. 1) is used to identify habitat deficiencies. Those identified habitat deficiencies provide targets for habitat improvements that benefit monarch butterflies (Fig. 2). The information offered in this appendix to the monarch WHEG will assist the conservation planner in plant identification and the selection of species to consider in a monarch butterfly habitat planting mix. This information is critical to implementation of steps 3–6 of the NRCS Conservation Planning process (USDA, NRCS 2021).

- ◆ Step 3: Inventory Resources
- ◆ Step 4: Analyze Resource Data
- ◆ Step 5: Formulate Alternatives
- ◆ Step 6: Evaluate Alternatives



Fig. 1. Southern High Plains Region.

Host Plant Selection and Monarch Survival: Monarch females selectively seek sites to lay eggs, preferring younger, more nutrient rich plants to lay 300 to 400 eggs on over a 2 to 5-week period (Fischer et al. 2015). A single female will typically lay 1 or 2 eggs on a single plant. Additionally, females appear to prefer plants without existing eggs or larva, and plants with few aphids (Agrawal 2017 and Borkin 1982). There appears to be preferences for some species over others. For example, gravid females do not utilize butterfly milkweed (*Asclepias tuberosa*) as often as common milkweed (*Asclepias syriaca*). Conversely, the non-native species, tropical milkweed (*Asclepias curassavica*)

is highly preferred for egg laying. Most monarch butterfly scientists and monarch conservation groups have raised disease concerns associated with tropical milkweed. These concerns primarily target lands adjacent to the Gulf of Mexico where tropical milkweed does not dieback in the winter. Regardless, NRCS does not support the use of non-native milkweeds for monarch habitat plantings.



Fig. 2. Monarch butterfly feeding on golden crownbeard (*Verbesina encelioides*) in Oklahoma.

Monarch female behavior of selecting plants without other monarch eggs or larva and limiting oviposition (egg laying) to 1–2 eggs per plant, assures enough plant biomass for each offspring to complete the larval stage¹. Some suggest that observation of multiple eggs and larva on a single plant is an ecological indicator that the site (and adjacent habitats) is deficient in adequate milkweeds². Predation of eggs and larva, primarily by predatory insects, is significant. Survival rate to the largest caterpillar stage has been documented to be as high as 10% (Borkin 1982; Prysby and Oberhauser 2004) but is more commonly less than 5%. Survival is also compromised by parasites, usually by tachinid flies (*Lespesia archippivora*) (Mueller and Baum 2014; Oberhauser et al. 2006). Monarchs will lay eggs on 5% to 25% of available plants in suitable habitat, although this rate varies widely (Kasten et al. 2016). It is estimated that approximately 30 milkweed plants are needed to produce an adult participating in the fall migration to Mexico (Nail et al. 2015).

Most studies agree that the loss of breeding habitat (milkweed) in the corn-belt region of the U.S. has affected the eastern monarch population (Pleasants and Oberhauser 2013). Other population stressors including variable climactic conditions, loss of nectaring habitat during

migration, deforestation of wintering habitat in Mexico, and increased parasite loads, may also play a role in the overall decline of the species (Agrawal 2017; Crewe et al., 2020; Flores-Martinez et al., 2019; Majewska et al., 2022; Inamine et al. 2016).

Monarch Larval Feeding Behavior: Immature, free-living larvae (caterpillars) of the monarch butterfly are obligate specialists on the leaves of milkweeds, primarily within the genus *Asclepias*, but also on milkweed vines in the genera of *Cynanchum*, *Funastrum*, and *Matelea*. The larval stage includes 5 instars (molts) and requires 8–15 days to complete. It is through the consumption of milkweed foliage as larvae that monarch butterflies gain the toxic cardenolides, which deter predation (Roeske et al. 1976) by birds and mammals³.

However, too much cardenolide consumption affects growth and survival of larvae. For this reason, females tend to select individual plants with a moderate level of cardenolides (Zalucki et al. 1990)⁴. First instars consume their egg casing, and then begin to feed on the surface of the leaf or flower. This feeding activity by the 1st instars is evidenced by shallow feeding grooves, often in small ½ inch circular patterns. As the larva grows (facilitated by molting), the grooves become deeper, until the larva creates a hole in the leaf that is often arc-shaped but may be circular or oval. Older larvae (3rd–5th instars) feed by consuming the entire leaf, often the newer (upper most) leaves, presumed of higher forage quality. Additionally, floral parts are commonly consumed. The latex (white sap) in the milkweed plants can be deadly to monarch larvae. Larvae often sever leaf veins, slowing or inhibiting the supply of latex. It is proposed that this feeding behavior reduces the supply of latex to the leaf, thereby improving foraging efficiencies and increasing survival (Zalucki et al. 2001). In addition to leaf damage, the accumulation of frass (excrement) on lower leaves and the ground provides evidence of a feeding monarch larva.

Adult Monarch Feeding Behavior: Adult monarchs rely on high-quality floral nectar to meet their energy requirements. Monarchs feed by rolling out their proboscis, a long flexible tube, to extract nectar from the flower (Krenn 2010). A feeding monarch perches on a flower and then moves their proboscis around, finding nectar from different locations. For this reason, monarchs prefer sturdy plants that have relatively flat surfaces like many sunflowers and asters or long multi-flowering inflorescences such as blazing star, where the nectar is easily accessed. In reviewing the two plant lists provided in this document, the user will find

many species in the Asteraceae family (sunflower family). Common characteristics of this family include clusters of flowers with shallow, easily accessed nectar. Milkweeds, which also have easily accessed nectar, are excellent nectar sources. Despite their somewhat long proboscises, monarchs rarely visit deep tubular flowers such as honeysuckles (*Lonicera spp.*).

Migration: Tagging data and observations documented in Journey North provide information about spring and fall migration, but little about the movements of individual monarchs in late spring and summer. Isotope technology provides additional understanding of monarch natal origins and migration patterns. Stable isotopes in the bodies of adults identify (predict) the milkweed species (and even local ecotypes) that an adult monarch fed upon as a larva. As new isotopes data is collected, monarch scientists are gaining an improved understanding of movement patterns in North America. It was once believed most all monarch adults in the northeastern U.S. moved along the Gulf, then northward to Maine. Recent isotope data suggests that most of the 2nd generation adults in the Northeast came from the Midwest by crossing the Appalachian Mountains (Miller et al. 2017). Using isotope and tagging data, Flockhart et al. (2013) suggested most of the 2nd generation adults that originated from the Midwest moved horizontally to populate the northern and eastern regions of the eastern U.S. This isotope work, coupled with other data (Miller et al. 2012), suggests a two-generational distribution pattern for the northern migration, rather than multi-generational (where each successive generation moves further north). The 1st generation adults migrate from the southern U.S. primarily, but far from exclusively, to the Midwest and Great Lakes region. The 2nd generation then spreads out across the U.S. and southern Canada, with many of the 3rd and 4th generation adults remaining in proximity to their natal origin. This approach results in rapid access to the cooler summer milkweed regions of the U.S., then provides for 2 generations to increase the overall population, maximizing numbers in preparation for the long and often fatal migration to the wintering grounds (Agrawal 2017).

Regardless of the northern migration patterns, monarchs emerging as adults in late summer migrate south to Mexico to repeat the cycle. Non-migrating adults live from 2–5 weeks, whereas migrating adults live through the fall and winter for 6–9 months. Most theorize they accomplish long distance travel by catching air currents and riding thermals using the soaring/gliding approach common to many other long-distance migrants (Gibo and Pallet 1979). Brower et al. (2006) suggest that monarchs do not prepare for this long

migration by storing energy (lipids) immediately, as these lipids would increase body mass and reduce flight efficiency. Rather, they consume nectar periodically during migration. As they near the overwintering locations in Mexico, they increase lipid consumption to build the energy reserves essential for the winter dormant period (November–March)⁵. Agrawal (2017) and Inamine et al. (2016) suggest that the availability of fall nectar resources, particularly in Texas and northern Mexico, may be an important variable in the success of the monarch wintering population in Mexico.

The fall migration patterns, documented by Journey North, and tagging data (Monarch Watch) demonstrate many of the monarchs raised in the Midwest migrate in a southwesterly direction. Tagging data finds movement of some individuals in a primarily westerly direction from the upper Midwest to Northern Great Plains when low-pressure systems are centered in the Midwest. When this occurs, large numbers of fall migrants can occur in southeastern North Dakota, eastern South Dakota, and east-central Nebraska. In some years (2015, 2019), strong easterly winds move fall migrants further west (Fig. 3). During such years, the Southern High Plains plays a critical role in providing fall nectaring resources for migrating monarchs. Land use changes and new management techniques in the Southern High Plains have resulted in the conversion of rangeland to irrigated cropland as well as eliminating potential nectar and host plants (Wright and Wimberly 2013) for monarchs.

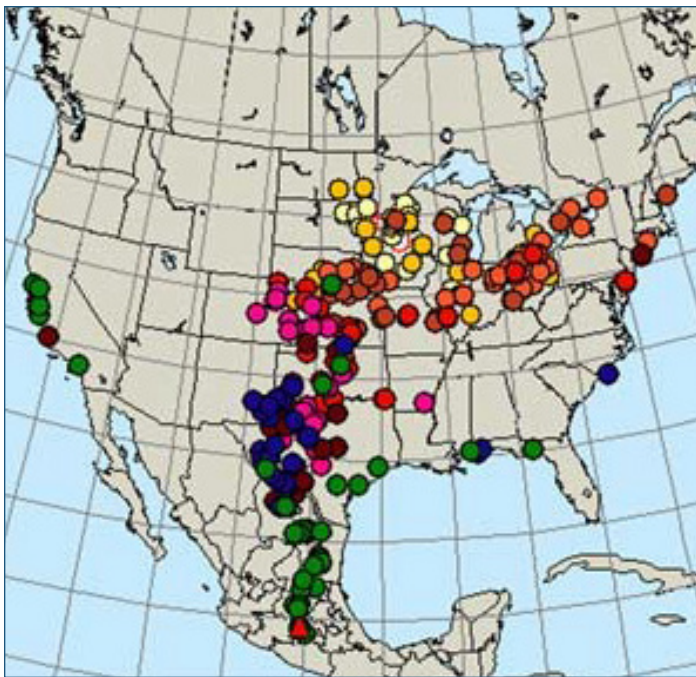


Fig. 3. Fall Monarch Butterfly “Roost Sightings” map for 2015 (Journey North). The strong easterly and southeasterly winds pushed the migration west of the normal patterns. Fall nectaring habitats, particularly in western Kansas and the Texas panhandle are critical to the health of migrating monarchs during such years.

Milkweeds (*Asclepias* spp.) (Fig. 4): The occurrence of the three most common milkweeds in this subregion is largely determined by available moisture. Horsetail milkweed (*Asclepias subverticillata*) occurs in the western portion of the Southern High Plains region on poor sandy soils with limited moisture availability. Broadleaf milkweed (*Asclepias latifolia*) is the most abundant milkweed in the region, occurring primarily on sandy soils throughout the region. Spider milkweed (*Asclepias Asperula*), also known as antelope horns, is more abundant in the eastern portion of the Southern High plains, where it is found on shallow soils over limestone and other areas where it can receive adequate moisture. Two other milkweeds that occur primarily in the Southern High Plains are sand milkweed (*Asclepias arenaria*) and Engelmann’s milkweed (*Asclepias engelmanniana*) in dry sandy soils. Commercial availability of seeds for the most common species of milkweed that occur in the region are very limited. Swamp milkweed (*Asclepias incarnata*), showy milkweed (*Asclepias speciosa*), and butterfly milkweed (*Asclepias tuberosa*) are more readily available via seed but occur less commonly in the region and require much higher levels of moisture for growth and reproduction.



Fig. 4. *Asclepias asperula*, a milkweed common to Texas and the Southern High Plains.

Natural moisture availability in the Southern High Plains region is low, coming primarily from convective thunderstorms during the summer and averaging 15 to 24 inches of rain across the region. Because of the timing and availability of rain, establishing new milkweeds and monarch habitat from seed can be difficult. Delayed rainfall or drought after seeding or shortly after plants begin to sprout can result in planting failures. Managing existing grasslands for forb diversity and milkweed density may be more appropriate techniques to improve monarch habitat on large acreages in the region.

Trees and Shrubs: Narrow bands of woody vegetation and shrubs can provide important fall resting sites (microclimates) for migrating monarchs as well as respite from the wind during the summer. The planting list provided in this document includes several species of shrubs known to provide nectar resources.

Native shrubs in this region are drought tolerant and offer flexibility for planners and participants looking to establish habitat. Shrubs may be established using NRCS conservation practices like Hedgerow (422) to provide monarch habitat. Drip irrigation can be used to help establish native forbs, shrubs, and bunch grasses in linear hedgerow plantings by providing a reliable source of moisture where establishment of habitat may not be otherwise possible. Care should be taken after establishment to slowly reduce irrigation levels over time to ensure adequate root development.

Establishment of tall shrubs or trees should avoid impacts on grassland birds. Grassland birds are the most at risk group of birds, having lost an estimated 53% of their population since 1970 (Rosenberg et al. 2019), in part due to forest encroachment into grasslands. Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*), a federally listed grassland bird species, is highly sensitive to the presence of trees and will avoid areas with as few as two trees per acre (Lautenbach et al. 2017). Avoid planting species that will grow taller than 3 feet in areas of rangeland and prairie with few trees. Some of the shrubs included in the guide like lead plant (*Amorpha canescens*) and some varieties of rubber rabbitbrush (*Ericameria nauseosa*) are suitable for this purpose.

Plant Lists and Plant Identification Guide: To assist with the application of the NRCS Monarch Butterfly WHEG Wildlife Habitat Evaluation Guide and Planning Tool: Southern High Plains Edition, this document provides two plant species lists, and a plant identification guide for use by conservation planners.

Monarch Planting List: The Monarch Planting List provides planting recommendations for improvement of monarch habitat with the use of an array of national conservation practices (e.g. Wildlife Habitat Planting (420) and Field Borders (386)). The list is comprised of native larval host plants and nectar plants suitable for monarch butterfly habitat plantings in each state. The following national minimum planting criteria shall be followed for all monarch butterfly habitat plantings. Nationally approved variances may be sought by states to address unique conditions when applicable.

- ♦ To provide food for monarch butterfly larvae, plantings should include at least one species of milkweed (*Asclepias* spp.) from the Monarch Planting List. All milkweed species used in the mix must be from this list and shall represent at least .5% of the total seeds in the mix. The total seeds include pure live seed from both grass and forbs.

Note: The commercial supply of *Asclepias* spp. is limited in some regions of the Southern High Plains. Refer to the NRCS state office guidance on areas where the requirements to include *Asclepias* in the mix is waived due to limited seed availability or when available species are not suitably adapted to the site.

- ♦ A grass component in a monarch habitat planting is commonly needed for ecological stability, weed control, and fuel for prescribed burning. State NRCS guidance provides information on the grass/forb ratio for monarch habitat plantings.
- ♦ To provide food for adults, at least 60% of the forb seeds in the mix shall be from the Monarch Planting List. The number of seeds is calculated based on total number of seeds planted per square foot. A monarch seed mix planted at 35 seeds per square foot of pure live seed, with 25% grass and 75% forb seeds would have a minimum of 15.75 seeds per square foot comprised of forb species from the Monarch Planting List (out of a total of 26.25 seeds per square foot). The remaining 10.5 seeds per square foot may be other native forbs that are not listed, plants of importance for other pollinators or wildlife, or be other species found on the list.
- ♦ The required percentage of milkweed seeds counts towards the 60% minimum because milkweeds are excellent nectar plants.
- ♦ Planners should choose a minimum of three plants in each of three different blooming periods (early, mid, and late). Doing so provides floral resources year-round for wildlife. Bloom period consideration shall coincide with monarch presence in the area. Monarchs in the southerly portions of the region may benefit from early and very late season blooms while monarchs in the northern portion of the region may benefit from mid and late season blooms.

Monarch WHEG Inventory Plant List: The *Monarch WHEG Inventory Plant List* is for use by conservation planners in the application of the herbaceous vegetation-sampling portion of the *Monarch Butterfly Wildlife Habitat Evaluation Guide: Southern High Plains Edition*. This process requires

identifying and inventorying vegetation in assessment areas that support an herbaceous plant community with a forb component. Some species on this list are grouped to facilitate a more rapid assessment. For example, there are many species of blanket flower, all in the genus *Gaillardia*. Identification of *Gaillardia* to species adds little value to the habitat assessment process. As such, they are combined into the *Gaillardia* spp. group.

Plant Identification Guide: The Monarch Habitat Plant Identification Guide contains plant identification sheets of species provided in the WHEG and planting lists for the Southern High Plains Region. The guides are organized alphabetically by common name used by the USDA-NRCS PLANTS Database (USDA, NRCS 2007). Plant species which were reported to be of superlative use to the monarch were rated as “Very High” value, as were plants mentioned in multiple sources as providing nectar to monarchs. Other plant species, which were also cited as attractive to monarchs, but with less frequency, were given the rating of “High” or “Moderate” value depending on their specific value.



A monarch butterfly caterpillar sits on leaf. Butterflies are one of nature's many pollinators for flowers and crops and are crucial in production for fruits and vegetables. USDA photo by Jerry Payne.

¹ The behavior of typically limiting egg laying to 1–2 eggs per plant may also serve to minimize predation, disease, and inadvertent cannibalism (monarch larva will consume their eggshell and other eggs if nearby).

² On occasion, “egg dumping” from females under extreme stress does occur, resulting in plants/leaves with several (10+) eggs. Egg dumping is not always an indication of inadequate milkweed availability.

³ These cardenolides do not affect most predatory invertebrates. Monarch larvae experience very large losses to predation from other arthropods (e.g. insects, spiders, centipedes).

⁴ Cardenolide levels can vary significantly, even among individual plants within the same species.

⁵ Monarchs do not feed at the wintering grounds but will move to access water during warmer days. Thus, the stored lipids are critical to winter survival.

MONARCH PLANT LIST

					Bloom Period			States				
Species Name	Plant Symbol	Common Name	Growth Habit	Monarch Value	Early	Mid	Late	CO	KS	NM	OK	TX
<i>Amorpha canescens</i>	AMCA6	lead plant	subshrub	Moderate		x		x	x	x	x	x
<i>Asclepias arenaria</i>	ASAR	sand milkweed	forb/herb	Very High		x	x	x	x	x	x	x
<i>Asclepias asperula</i>	ASAS	antelope horn	forb/herb	Very High	x		x	x	x	x	x	x
<i>Asclepias englemanniana</i>	ASEN	Englemann's milkweed	forb/herb	Very High		x	x	x	x	x	x	x
<i>Asclepias incarnata</i>	ASIN	swamp milkweed	forb/herb	Very High		x	x	x	x	x	x	x
<i>Asclepias latifolia</i>	ASLA4	broadleaf milkweed	forb/herb	Very High	x	x		x	x	x	x	x
<i>Asclepias oenotheroides</i>	ASOE	zizotes milkweed	forb/herb	Very High	x	x		x		x	x	x
<i>Asclepias speciosa</i>	ASSP	showy milkweed	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Asclepias stenophylla</i>	ASST	slimleaf milkweed	forb/herb	Very High		x	x	x	x	x	x	x
<i>Asclepias subverticillata</i>	ASSU2	horsetail milkweed	forb/herb	Very High		x	x	x	x	x	x	x
<i>Asclepias tuberosa</i>	ASTU	butterfly milkweed	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Centaurea americana</i>	CEAM2	basket flower	forb/herb	High		x				x	x	x
<i>Cirsium undulatum</i>	CIUN	wavyleaf thistle	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Dalea candida</i>	DACA7	white prairie clover	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Dalea multiflora</i>	DAMU	roundhead prairie clover	forb/herb	Moderate	x	x		x	x		x	x
<i>Dalea purpurea</i>	DAPU5	purple prairie clover	forb/herb	Moderate		x	x	x	x	x	x	x
<i>Echinacea angustifolia</i>	ECAN2	narrowleaf purple coneflower	forb/herb	Very High		x	x	x	x	x	x	x
<i>Engelmannia peristenia</i>	ENPN4	Engelmann's daisy	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Ericameria nauseosa</i>	ENA10	rubber rabbitbrush	shrub	Very High		x	x	x	x	x	x	x
<i>Eryngium leavenworthii</i>	ERLE11	Leavenworth's eryngo	forb/herb	High		x			x			x
<i>Erysimum asperum</i>	ERAS2	western wallflower	forb/herb	Moderate	x			x	x	x	x	x
<i>Eupatorium perfoliatum</i>	EUPE3	common boneset	forb/herb	High		x	x		x		x	x
<i>Funastrum cynanchoides</i>	FUCY	fringed twinevine	forb/herb	High	x	x				x	x	x
<i>Gaillardia pinnatifida</i>	GAPI2	red dome blanketflower	forb/herb	High		x	x	x	x	x	x	x
<i>Gaillardia pulchella</i>	GAPU	Indian blanket	forb/herb	High		x	x	x	x	x	x	x
<i>Gaillardia suavis</i>	GASU	Perfumeballs	forb/herb	High	x	x			x		x	x
<i>Glandularia bipinnatifida</i>	GLBI2	Dakota mock vervain	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Grindelia papposa</i>	GRPA8	Spanish gold	forb/herb	Moderate			x	x	x	x	x	x
<i>Helenium amarum</i>	HEMA	sneezeweed	forb/herb	Moderate	x	x	x					x
<i>Helianthus annuus</i>	HEAN3	common sunflower	forb/herb	Very High		x	x	x	x	x	x	x
<i>Helianthus grosseserratus</i>	HEGR4	sawtooth sunflower	forb/herb	High		x	x	x	x	x	x	x
<i>Helianthus maximiliani</i>	HEMA2	Maximilian sunflower	forb/herb	Very High		x	x	x	x		x	x
<i>Helianthus nuttallii</i>	HENU	Nuttall's sunflower	forb/herb	High		x	x	x		x		

Monarch Plant List Continued												
					Bloom Period			States				
Species Name	Plant Symbol	Common Name	Growth Habit	Monarch Value	Early	Mid	Late	CO	KS	NM	OK	TX
<i>Helianthus pauciflorus</i>	HEPA19	stiff sunflower	forb/herb	High		x	x	x		x		
<i>Helianthus petiolaris</i>	HEPE	prairie sunflower	forb/herb	High		x	x	x	x	x	x	x
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/herb	Moderate		x	x	x		x		
<i>Liatris punctata</i>	LIPU	dotted blazing star	forb/herb	Very High		x	x	x	x	x	x	x
<i>Lithospermum incisum</i>	LIIN2	narrowleaf stoneseed	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Monarda citriodora</i>	MOCI	lemon beebalm	forb/herb	High	x	x			x	x	x	x
<i>Monarda fistulosa</i>	MOFI	wild bergamot	forb/herb	Very High		x	x	x		x		
<i>Monarda punctata</i>	MOPU	spotted beebalm	forb/herb	High	x	x	x		x	x	x	x
<i>Oligoneuron rigidum</i>	OLRI	stiff goldenrod	forb/herb	High			x	x	x	x		x
<i>Onosmodium bejariense</i>	ONBE	soft-hair marbleseed	forb/herb	Moderate		x		x	x	x	x	
<i>Packera plattensis</i>	PAPL12	prairie groundsel	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Polygonum pennsylvanicum</i>	POPEO2	Pennsylvania smartweed	forb/herb	Moderate		x	x	x	x	x	x	x
<i>Prunus americana</i>	PRAM	American plum	tree	High	x			x	x	x	x	
<i>Prunus angustifolia</i>	PRAN3	Chickasaw plum	tree	High	x			x	x	x	x	x
<i>Ribes aureum</i>	RIAU	golden currant	shrub	High	x	x		x	x	x	x	x
<i>Rudbeckia hirta</i>	RUHI2	blackeyed Susan	forb/herb	Moderate		x	x	x	x	x		
<i>Solidago canadensis</i>	SOCA6	Canada goldenrod	forb/herb	High			x	x		x	x	x
<i>Solidago nemoralis</i>	SONE	gray goldenrod	forb/herb	Very High		x	x	x		x		x
<i>Solidago petiolaris</i>	SOPE	downy ragged goldenrod	forb/herb	High		x	x	x	x	x		x
<i>Symphyotrichum ericoides</i>	SYER	white heath aster	forb/herb	High		x	x	x	x	x	x	x
<i>Symphyotrichum laeve</i>	SYLA3	smooth blue aster	forb/herb	Very High		x	x	x		x		
<i>Symphyotrichum novae-angliae</i>	SYNO2	New England aster	forb/herb	Very High		x	x	x		x		
<i>Symphyotrichum oblongifolium</i>	SYOB	aromatic aster	forb/herb	Very High			x	x	x	x	x	x
<i>Symphyotrichum praealtum</i>	SYPR5	willowleaf aster	forb/herb	Very High		x	x	x	x	x	x	x
<i>Verbena stricta</i>	VEST	hoary verbena	forb/herb	Very High	x	x	x			x		x
<i>Verbesina encelioides</i>	VEEN	golden crownbeard	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Vernonia baldwinii</i>	VEBA	Baldwin's ironweed	forb/herb	High		x	x		x		x	x

USDA, NRCS. 2024. PLANTS Database (<http://plants.usda.gov>, 4/1/2024). National Plant Data Team, Greensboro, NC 27401-4901 USA.

MONARCH WHEG INVENTORY LIST

					Bloom Period			States				
Species Name	Plant Symbol	Common Name	Growth Habit	Monarch Value	Early	Mid	Late	CO	KS	NM	OK	TX
<i>Amorpha canescens</i>	AMCA6	lead plant	subshrub	Moderate		x		x	x	x	x	x
<i>Asclepias spp.</i>	ASCLE	milkweed	forb/herb	Very High		x	x	x	x	x	x	x
<i>Centaurea americana</i>	CEAM2	basket flower	forb/herb	High		x				x	x	x
<i>Cirsium undulatum</i>	CIUN	wavyleaf thistle	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Dalea spp.</i>	DALEA	prairie clover	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Echinacea angustifolia</i>	ECAN2	narrowleaf purple coneflower	forb/herb	Very High		x	x	x	x	x	x	x
<i>Engelmannia peristenia</i>	ENPN4	Engelmann's daisy	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Ericameria nauseosa</i>	ENA10	rubber rabbitbrush	shrub	Very High		x	x	x	x	x	x	x
<i>Eryngium leavenworthii</i>	ERLE11	Leavenworth's eryngo	forb/herb	High		x			x			x
<i>Erysimum asperum</i>	ERAS2	western wallflower	forb/herb	Moderate	x			x	x	x	x	x
<i>Eupatorium perfoliatum</i>	EUPE3	common boneset	forb/herb	High		x	x		x		x	x
<i>Funastrum cynanchoides</i>	FUCY	fringed twinevine	forb/herb	High	x	x				x	x	x
<i>Gaillardia spp.</i>	GAILL	blanketflower	forb/herb	High		x	x	x	x	x	x	x
<i>Glandularia bipinnatifida</i>	GLBI2	Dakota mock vervain	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Grindelia papposa</i>	GRPA8	Spanish gold	forb/herb	Moderate			x	x	x	x	x	x
<i>Helenium amarum</i>	HEMA	sneezeweed	forb/herb	Moderate	x	x	x	x	x	x	x	x
<i>Helianthus spp.</i>	HELIA3	sunflower	forb/herb	High		x	x					x
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/herb	Moderate		x	x	x	x	x	x	x
<i>Liatris punctata</i>	LIPU	dotted blazing star	forb/herb	Very High		x	x	x	x	x	x	x
<i>Lithospermum incisum</i>	LIIN2	narrowleaf stone seed	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Monarda spp.</i>	MONAR	bee balm	forb/herb	High	x	x			x	x	x	x
<i>Oligoneuron rigidum</i>	OLRI	stiff goldenrod	forb/herb	High			x	x	x	x		x
<i>Onosmodium bejariense</i>	ONBE	soft-hair marbles seed	forb/herb	Moderate		x		x	x	x	x	
<i>Packera plattensis</i>	PAPL12	prairie groundsel	forb/herb	Moderate	x	x		x	x	x	x	x
<i>Polygonum pennsylvanicum</i>	POPEO2	Pennsylvania smartweed	forb/herb	Moderate		x	x	x	x	x	x	x
<i>Prunus spp.</i>	PRUNU	plum	tree	High	x			x	x	x	x	x
<i>Ribes aureum</i>	RIAU	golden currant	shrub	High	x	x		x	x	x	x	x
<i>Rudbeckia hirta</i>	RUHI2	blackeyed Susan	forb/herb	Moderate		x	x	x	x	x		
<i>Solidago spp.</i>	SOLID	goldenrod	forb/herb	High			x	x	x	x	x	x
<i>Symphyotrichum spp.</i>	SYMPH4	heath aster	forb/herb	High		x	x	x	x	x	x	x
<i>Verbena stricta</i>	VEST	hoary verbena	forb/herb	Very High	x	x	x			x		x
<i>Verbesina encelioides</i>	VEEN	golden crownbeard	forb/herb	Very High	x	x	x	x	x	x	x	x
<i>Vernonia baldwinii</i>	VEBA	Baldwin's ironweed	forb/herb	High		x	x		x		x	x

USDA, NRCS. 2024. PLANTS Database (<http://plants.usda.gov>, 4/1/2024). National Plant Data Team, Greensboro, NC 27401-4901 USA.

FLOWER COLOR CHART

Comon Name	Flower Color	Scientific Name	Flower Color
American plum	 white	<i>Amorpha canescens</i>	 purple
antelope horn	 green	<i>Asclepias arenaria</i>	 green
aromatic aster	 blue	<i>Asclepias asperula</i>	 green
Baldwin's ironweed	 purple	<i>Asclepias englemanniana</i>	 green
basket flower	 pink	<i>Asclepias incarnata</i>	 pink
Black-eyed Susan	 yellow	<i>Asclepias latifolia</i>	 yellow
broadleaf milkweed	 yellow	<i>Asclepias oenotheroides</i>	 white
butterfly milkweed	 orange	<i>Asclepias speciosa</i>	 white
Canada goldenrod	 yellow	<i>Asclepias stenophylla</i>	 green
Chickasaw plum	 white	<i>Asclepias subverticillata</i>	 white
common boneset	 white	<i>Asclepias tuberosa</i>	 orange
common sunflower	 yellow	<i>Centaurea americana</i>	 pink
Dakota mock vervain	 purple	<i>Cirsium undulatum</i>	 pink
dotted blazing star	 blue	<i>Dalea candida</i>	 white
downy ragged goldenrod	 yellow	<i>Dalea multiflora</i>	 white
Engelmann's daisy	 yellow	<i>Dalea purpurea</i>	 purple
Englemann's milkweed	 green	<i>Echinacea angustifolia</i>	 pink
fringed twinevine	 white	<i>Engelmannia peristenia</i>	 yellow
golden crownbeard	 yellow	<i>Ericameria nauseosa</i>	 yellow
golden currant	 yellow	<i>Eryngium leavenworthii</i>	 purple
gray goldenrod	 yellow	<i>Erysimum asperum</i>	 yellow
hoary verbena	 purple	<i>Eupatorium perfoliatum</i>	 white
horsetail milkweed	 white	<i>Funastrium cynanchoides</i>	 white
Indian blanket	 red	<i>Gaillardia pinnatifida</i>	 yellow
lead plant	 purple	<i>Gaillardia pulchella</i>	 red
Leavenworth's eryngo	 purple	<i>Gaillardia suavis</i>	 red
lemon beebalm	 pink	<i>Glandularia bipinnatifida</i>	 purple
Maximilian sunflower	 yellow	<i>Grindelia papposa</i>	 yellow
narrowleaf purple coneflower	 pink	<i>Helenium amarum</i>	 yellow
narrowleaf stoneseed	 yellow	<i>Helianthus annuus</i>	 yellow
New England aster	 purple	<i>Helianthus grosseserratus</i>	 yellow
Nuttall's sunflower	 yellow	<i>Helianthus maximiliani</i>	 yellow
Pennsylvania smartweed	 white	<i>Helianthus nuttallii</i>	 yellow
roundhead prairie clover	 white	<i>Monarda citriodora</i>	 pink
rubber rabbitbush	 yellow	<i>Monarda fistulosa</i>	 pink
sand milkweed	 green	<i>Monarda punctata</i>	 pink
sawtooth sunflower	 yellow	<i>Oligoneuron rigidum</i>	 yellow
showy milkweed	 white	<i>Onosmodium bejariense</i>	 white
slimleaf milkweed	 green	<i>Packera plattensis</i>	 yellow

Flower Color Chart Continued			
Comon Name	Flower Color	Scientific Name	Flower Color
smooth blue aster	 blue	<i>Polygonum pensylvanicum</i>	 white
smooth oxeye	 yellow	<i>Prunus americana</i>	 white
sneezeweed	 yellow	<i>Prunus angustifolia</i>	 white
soft-hair marbleseed	 white	<i>Ribes aureum</i>	 yellow
Spanish gold	 yellow	<i>Rudbeckia hirta</i>	 yellow
spotted beebalm	 pink	<i>Solidago canadensis</i>	 yellow
stiff goldenrod	 yellow	<i>Solidago nemoralis</i>	 yellow
stiff sunflower	 yellow	<i>Solidago petiolaris</i>	 yellow
swamp milkweed	 pink	<i>Symphyotrichum ericoides</i>	 white
wavyleaf thistle	 pink	<i>Symphyotrichum laeve</i>	 blue
western wallflower	 yellow	<i>Symphyotrichum novae-angliae</i>	 purple
white heath aster	 white	<i>Symphyotrichum oblongifolium</i>	 blue
white prairie clover	 white	<i>Symphyotrichum praealtum</i>	 purple
wild bergamot	 purple	<i>Verbena stricta</i>	 purple
willowleaf aster	 purple	<i>Verbesina encelioides</i>	 yellow
zizotes milkweed	 white	<i>Vernonia baldwinii</i>	 purple

American plum (*Prunus americana*)

Rose Family

Other Common Names: wild plum

Scientific Name: *Prunus americana* Marshall

Plant Symbol: PRAM

Distinguishing characteristics: Erect, to 12 inches in diameter; bark thick, dark grayish brown; branches thorny; bark smooth, purplish. Leaves alternate, simple, obovate to lanceolate-ovate, 2.5 to 4 inches long, 1 to 2 inches wide, shiny green, margins sharply toothed; tips tapering to points. Clusters of 2–5 flowers on branches before leaves appear. Flowers 0.75 to 1 inch wide; sepals 5; petals white, 5 to 0.5 inch long. Fruit is a purplish red about 1 inch in diameter with a single hard seed.

Plant Height: 10–25 feet

Blooms/Fruits: Blooms April–May; Fruits August–September

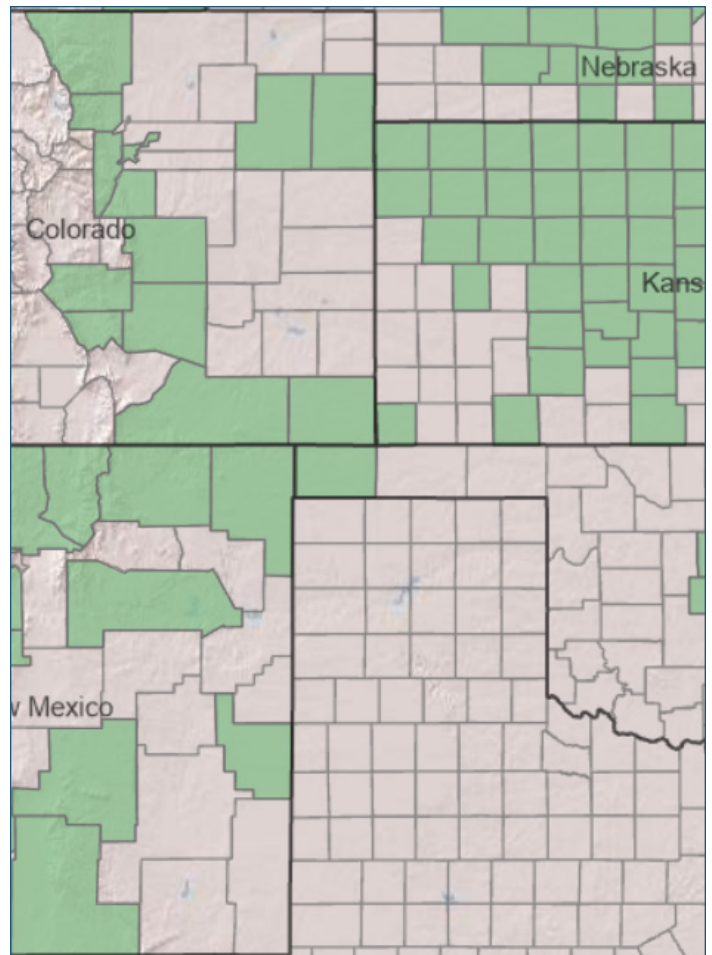
Duration: Perennial, woody

Pollinator Value: This species is of very high value to bumblebees, other native bees, honeybees, butterflies, moths, beetles, wasps, and flies. It is a butterfly host plant and a moth host plant.

Habitat: Woodland edges, stream banks, upland pastures, thickets, ravines, and roadsides.

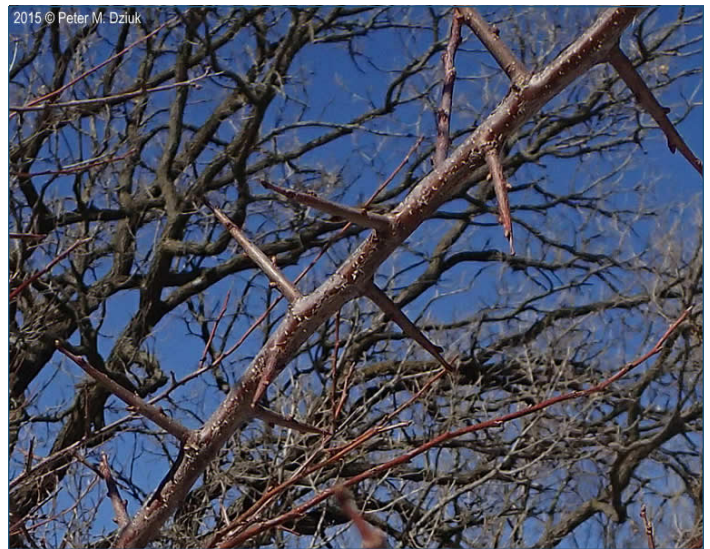


Photo: Peter M. Dziuk





Flower cluster/close-up of flowers



Close-up of leaf and spiny branch



Close-up of Fruit and bud development

Antelope Horn (*Asclepias asperula*)

Milkweed Family

Other Common Names: antelope horns, trailing milkweed
Family: Asclepiadaceae

Scientific Name: *Asclepias asperula* (Decne.) Woodson
Plant Symbol: ASAS

Distinguishing characteristics: Flowers pale green with petals spreading; leaves alternate or sub-opposite on the stem with short leaf stalks; flowers in tight axillary rounded clusters.

Plant Height: 1–2 feet **Blooms/Fruits:** April–June, September **Duration:** Perennial **Growth Habit:** Forb/herb

Pollinator Value: Larval host plant for monarch butterfly. The plant's high-quality nectar makes it very attractive to butterflies and bees.

Habitat: Rocky and calcareous prairies, Texas blackland prairies. Western half of the Great Plains.

NOTE: This species is very similar to green milkweed (*A. viridis*) but has narrower petals that have a pointed tip; the inflorescence is a tightly packed almost rounded cluster of flowers; and the stems are generally sprawling across the ground or only slightly erect.



Photo: Pam Williams, Lady Bird Johnson Wildflower

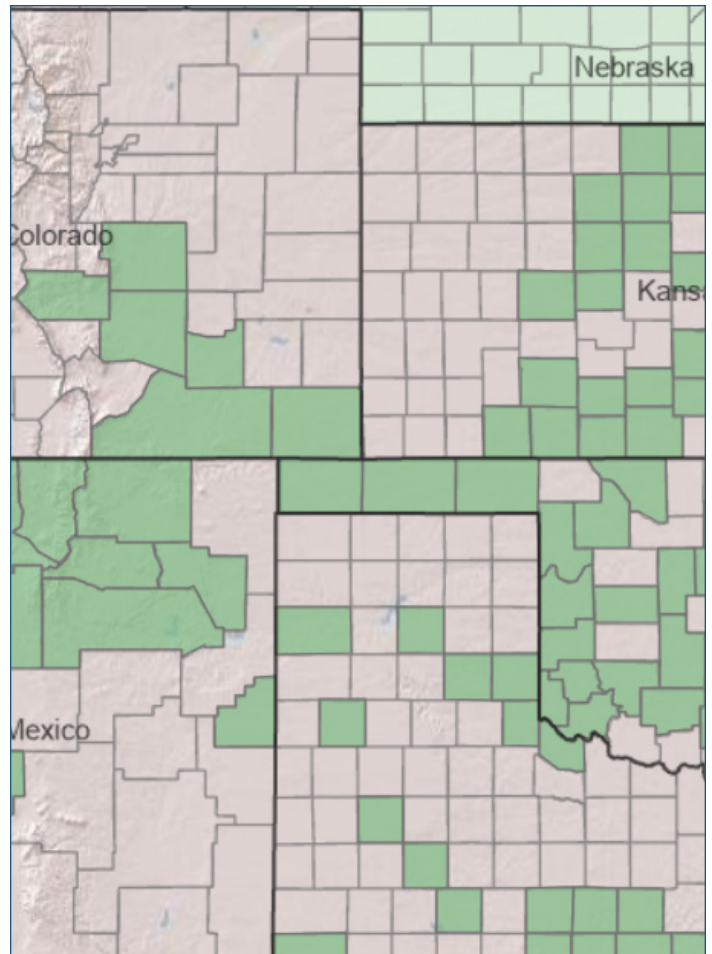




Photo: Campbell and Lynn Loughmiller Lady Bird Johnson Wildflower Center

Flowering antelope horns



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center



Flowering/close-up of partial open flowers (left); open flowers (right)



Joseph Marcus, Lady Bird Johnson Wildflower Center

Fruit



Photo: Pam Williams, Lady Bird Johnson Wildflower

Empty fruit pod

Aromatic Aster (*Symphyotrichum oblongifolium*)

Aster Family

Other Common Names: aromatic American aster, fall aster, wild blue aster, shale aster, oblong-leaved aster

Scientific Name: *Symphyotrichum oblongifolium* (Nutt.) G.L. Nesom

Plant Symbol: SYOB

Distinguishing characteristics: Stems much branched above the midpoint, several stems developing from a woody horizontal rhizome; leaves basal as well as along the stem, the basal leaves usually absent when flowering, stem leaf shape is oblong to widest across the top, without a leaf stem, and they become progressively smaller moving up the stem; flowering heads numerous at the ends of branches, blue rays and yellow centers, about 1 inch across.

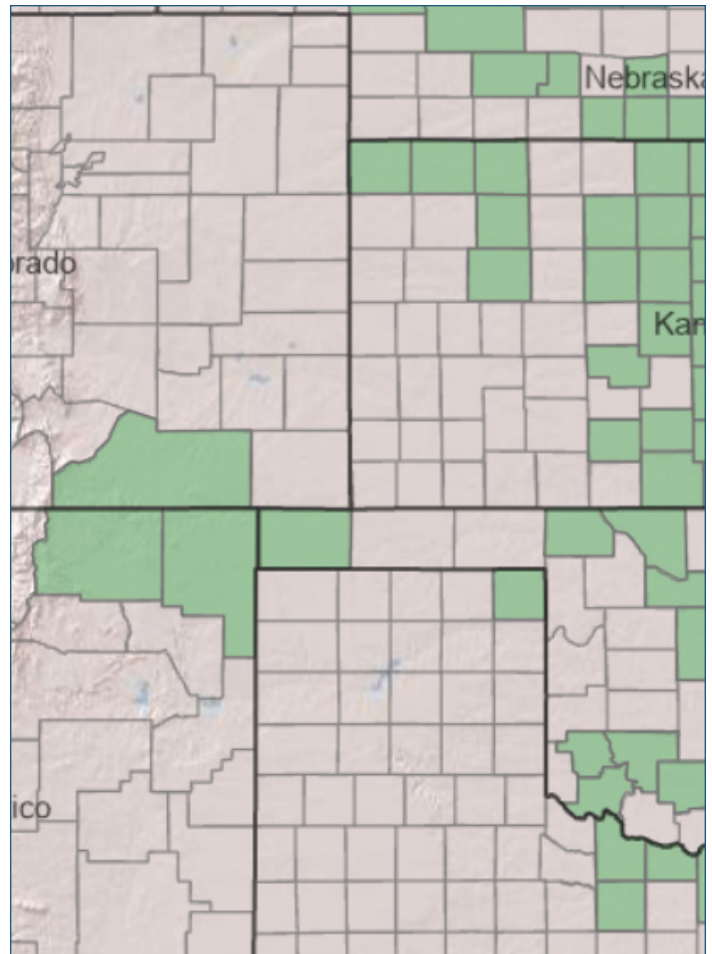
Plant Height: 1–2 feet

Blooms/Fruits: September–November

Duration: Perennial, herbaceous

Pollinator Value: Visited by a wide diversity of native bees, flies and butterflies. Serves as a host plant for the silvery checkerspot butterfly. Particularly important in that it is one of the latest plants to bloom in fall, providing nectar and pollen at a time when few other native plants do.

Habitat: Calcareous soils, upland prairies, openings in upland forests, and roadsides.





Full flowering/close-up of flowers



Close-up of leaf/foliage

Baldwin's Ironweed (*Vernonia baldwinii*)

Aster Family

Other Common Names: ironweed, western ironweed **Scientific Name:** *Vernonia baldwinii* Torr. **Plant Symbol:** VEBA

Distinguishing characteristics: Dark purple flower heads with dark green foliage; leaves narrowly lance shaped, uniformly hairy on the lower surfaces, upper surfaces with very fine hairs; tapering to both the tip and base of the leaf.

Plant Height: 3–5 feet

Blooms/Fruits: July–November

Duration: Perennial, herbaceous

Pollinator Value: The plant is known to attract bees and butterflies.

Habitat: Open pastures and woodlands, savannahs, fencerows, and overgrazed pastures.



Photo: Peter M. Dziuk

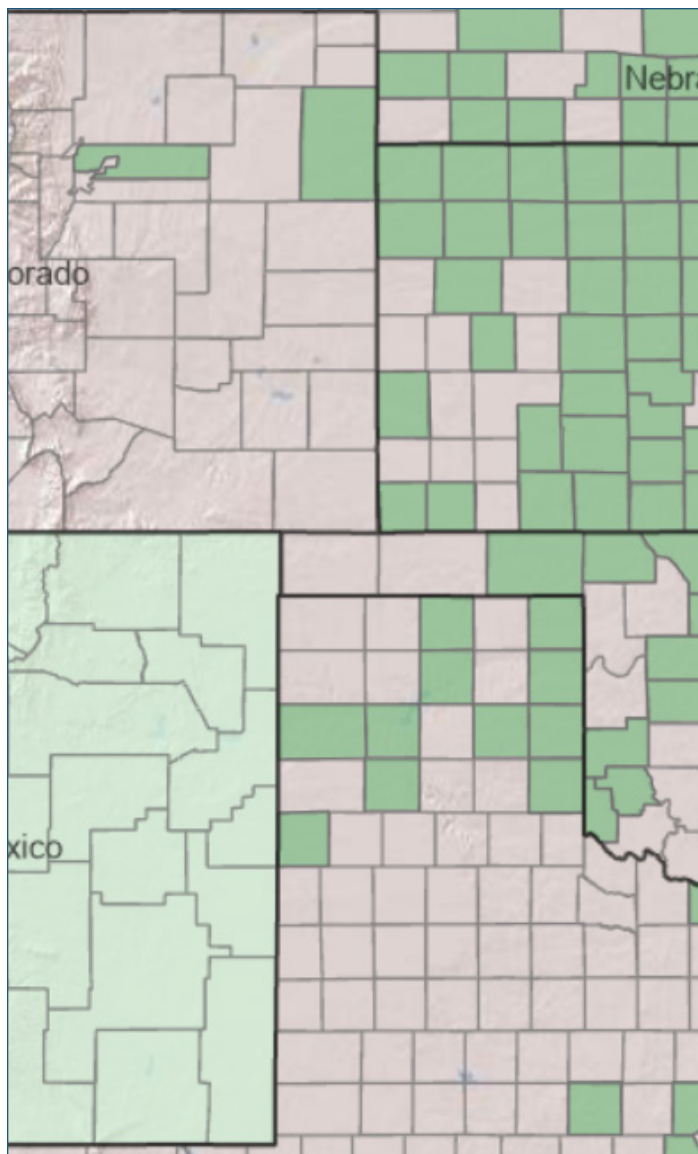


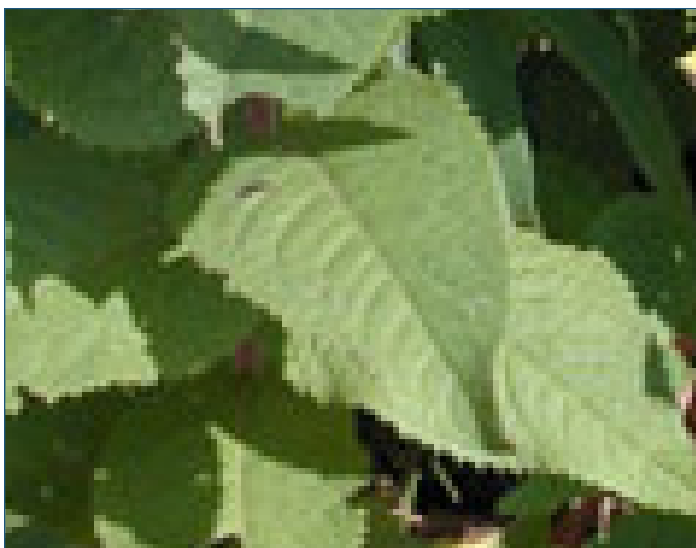


Photo: Sandy Smith, Lady Bird Johnson Wildflower

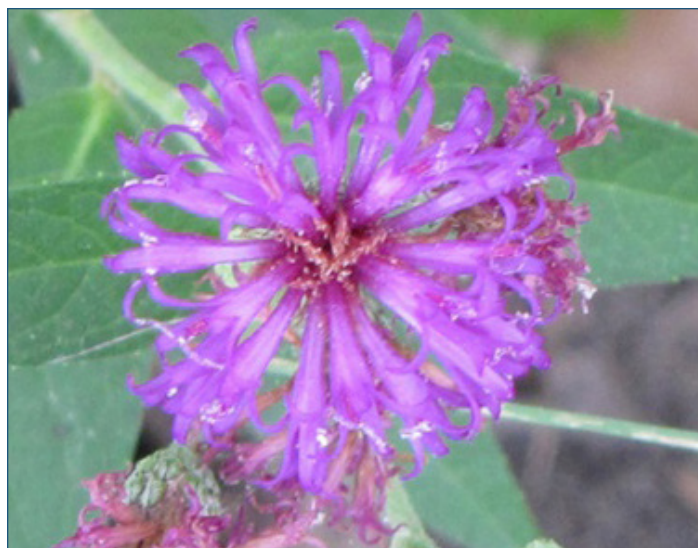


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Close-up of flower/flowering



Leaves



Close-up of flower/flowering



Photo: Sandy Smith, Lady Bird Johnson Wildflower

Close-up of flower buds



Photo: John Hilty, Illinois Wildflowers

Senescence

Basket Flower (*Centaurea americana*)

Aster Family

Other Common Names: American basket flower, American knapweed, powderpuff thistle, shaving brush **Scientific Name:** *Centaurea americana* Nutt. **Plant Symbol:** CEAM2

Distinguishing characteristics: Flower heads are thistle-like, 3–5 in. across, pink to light purple on the outside with a cream colored center; the bracts under the flowering head resemble a woven basket with each bract having fringed margins; leaves are alternate, arrow-shape, attach directly to the stem with no leaf stalk, and have smooth margins (without serrations).

Plant Height: 2–6 feet

Blooms/Fruits: May–June

Duration: Annual

Growth Habit: Forb/herb

Pollinator Value: This flower provides high quality to nectar to many types of bees and butterflies.

Habitat: Dry to mesic soils, disturbed sites.

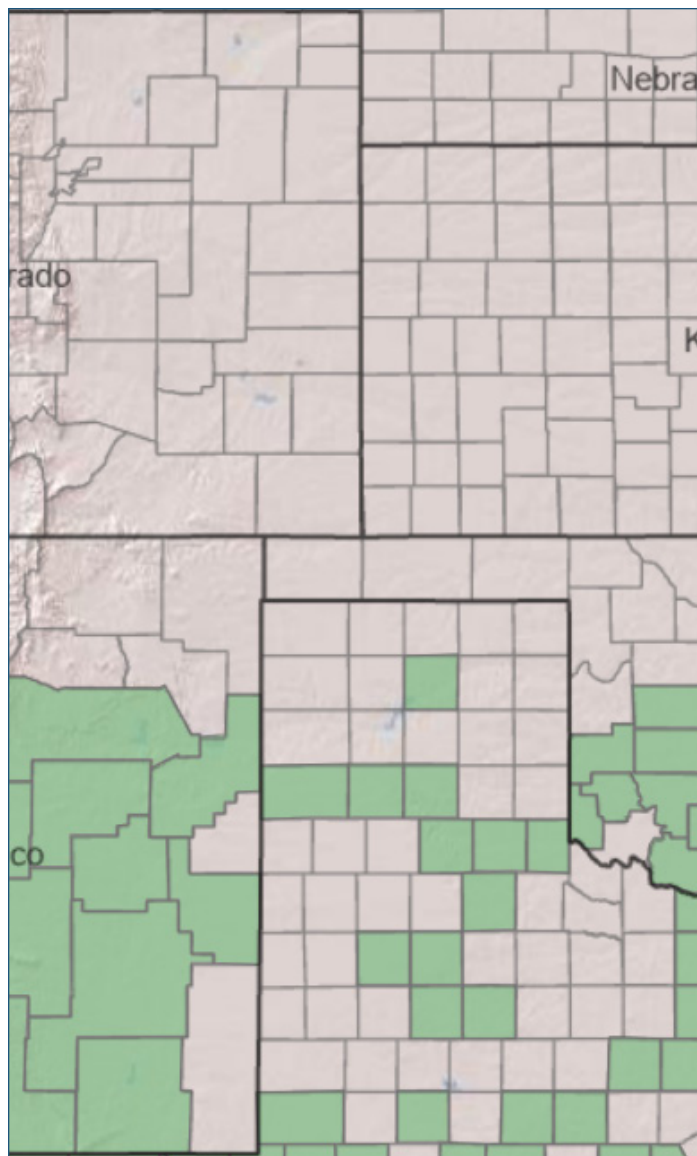
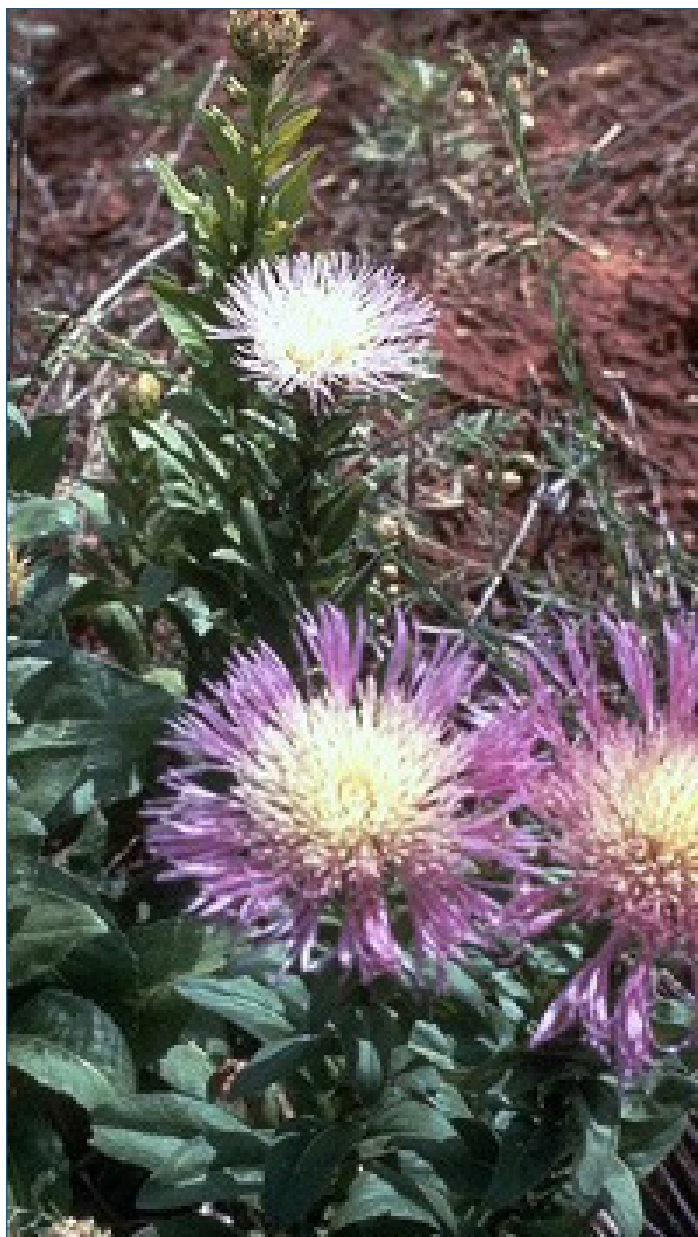




Photo: James Baines, Lady Bird Johnson Wildflower Center

Flower bud



Photo: Sally and Andy Wasowski, Lady Bird Johnson

Full flowering

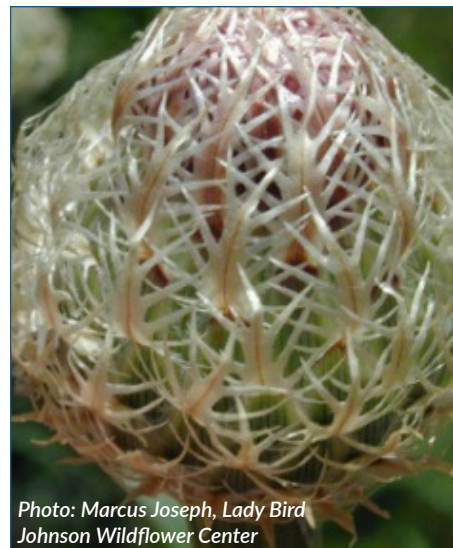


Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center

Spent flower



Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center

Close-up of flower



Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center



Photo: Peggy Romfh, Lady Bird Johnson Wildflower Center

Leaf arrangement



Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Mature

Blackeyed Susan (*Rudbeckia hirta*)

Aster Family

Other Common Names: common black-eyed Susan, brown-eyed Susan, brown Betty, poor-land daisy, English bulls-eye

Scientific Name: *Rudbeckia hirta* L.

Plant Symbol: RUHI2

Distinguishing characteristics: The gorgone checkerspot and bordered patch butterflies use this plant as a larval food source. It may attract butterflies.

Plant Height: 2–3 feet
Blooms/Fruits: June–October
herbaceous (developing taproots)

Duration: Annual, Biennial, to short lived Perennial,

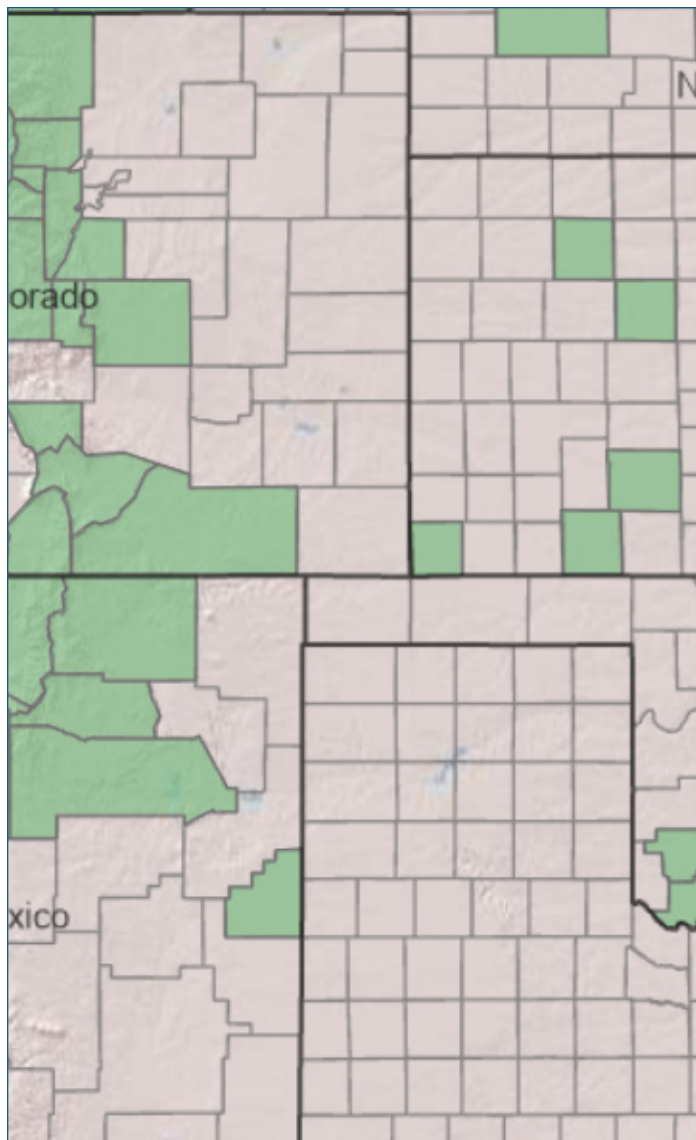
Pollinator Value: The plant is known to attract bees and butterflies.

Habitat: Open dry woods, prairies, pastures, old fields, and roadsides.

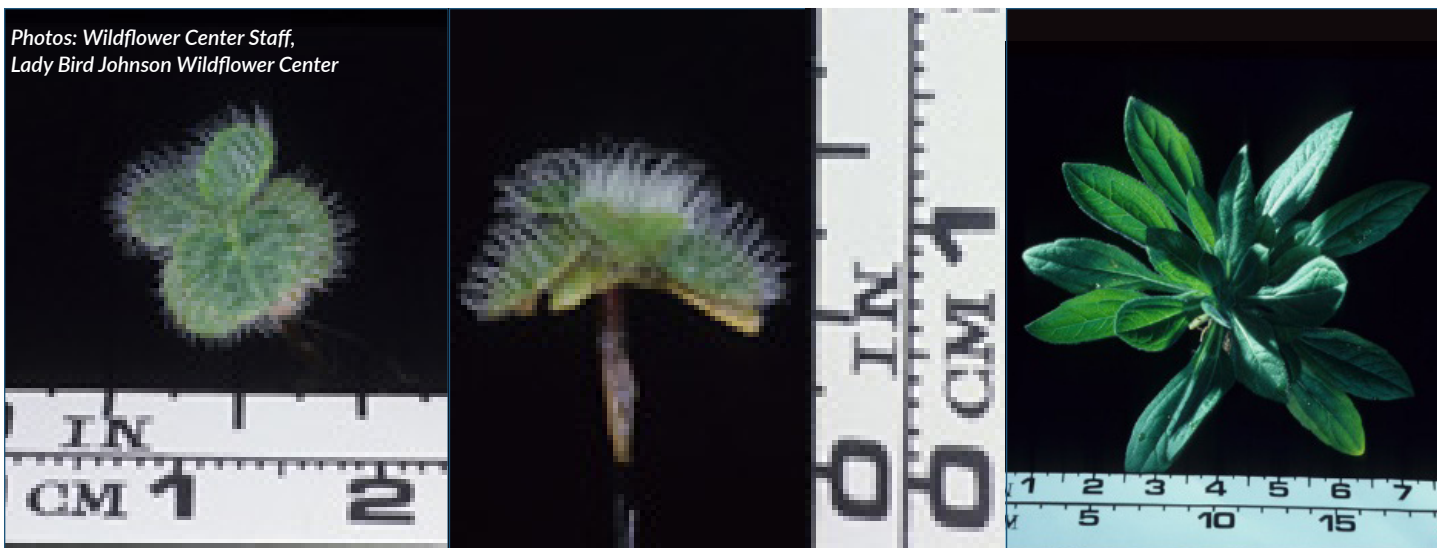
NOTE: There are 4 botanical varieties within the US, all going by the common name blackeyed Susan. Only 2 of the varieties occur natively in the Midwest Region: *R. hirta* var. *hirta* and *R. hirta* var. *pulcherrima*. Blackeyed Susan is a commonly cultivated plant and cultivars available.



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Photos: Wildflower Center Staff,
Lady Bird Johnson Wildflower Center



Seedlings



Photo: Thomas Muller, Lady Bird Johnson Wildflower Center

Close-up of blooms



Photo: Stanley Harmon, Lady Bird Johnson Wildflower Center

Mature plant



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Close-up of stem



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Leaves

Broadleaf Milkweed (*Asclepias latifolia*)

Milkweed Family

Other Common Names: corn-kernel milkweed **Scientific Name:** *Asclepias latifolia* (Torr.) Raf. **Plant Symbol:** ASLA4

Distinguishing characteristics: Stems unbranched, 1 or more developing from an underground tuber; leaves large, broad, waxy, almost circular with a blunt or notched tip, 3–4 in. long × 2 in. wide, and without a leaf stem or a very short one; flowers in axillary clusters, pale green-yellowish green; petals reflexed: hood lime-green to yellowish, turning yellow with age and appearing like a corn-kernel.

Plant Height: 2–3 feet

Blooms/Fruits: May–June

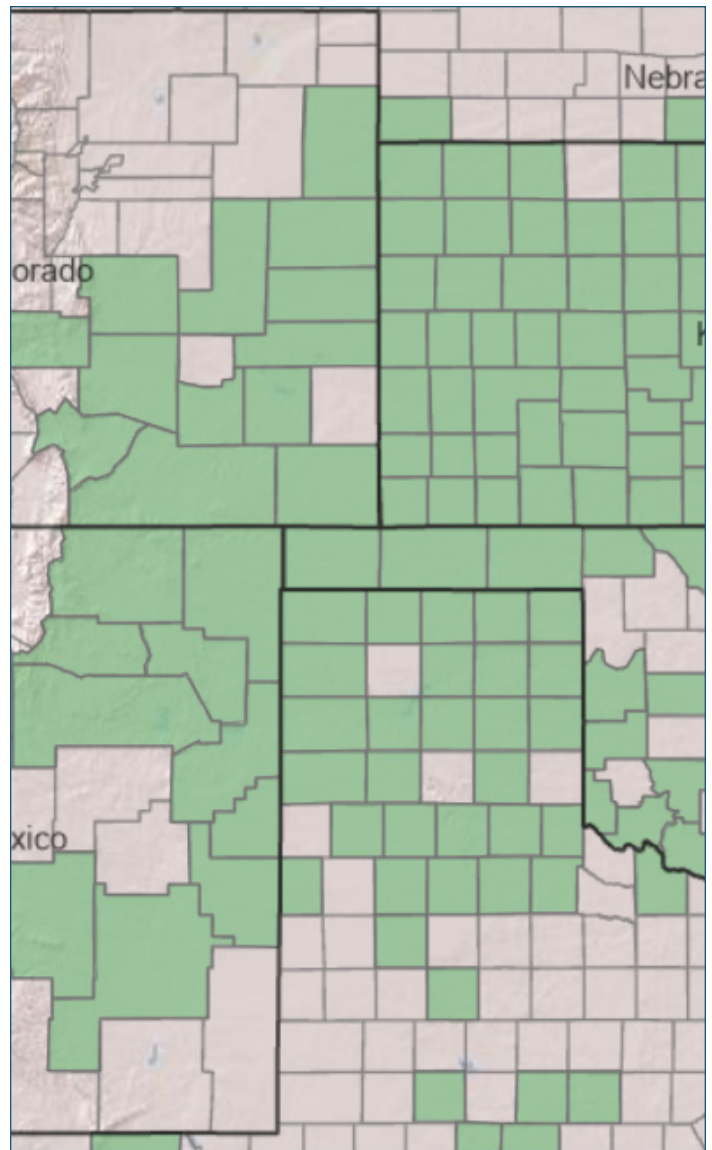
Duration: Perennial, herbaceous

Pollinator Value: Visited by a diversity of bees (including honeybees and bumble bees), plus numerous species of flies, beetles and butterflies. An important host plant for monarchs in the southern shortgrass and mixed grass prairie.

Habitat: Dry washes, grazed pastures and prairies, mowed or hayed areas, mowed roadsides, rocky calcareous soils.



Photo: Mike Haddock, Kansas Stat Univ.





Full flowering/leaf arrangement



Full flowering/leaf arrangement



Foliage and fruit

Butterfly Milkweed (*Asclepias tuberosa*)

Milkweed Family

Other Common Names: orange milkweed, butterfly weed **Scientific Name:** *Asclepias tuberosa* L. **Plant Symbol:** ASTU

Distinguishing characteristics: Brick red or orange flowers; hairy stem; long and narrow leaves with smooth leaf margins; sap not milky like other milkweed species.

Plant Height: Up to 2½ feet

Blooms/Fruits: May–October

Duration: Perennial, herbaceous

Pollinator Value: Larval host plant for monarch butterfly. The plant is very attractive to butterflies because it is a high-quality nectar source.

Habitat: Upland; sandy, loamy, or rocky limestone soils.



Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center

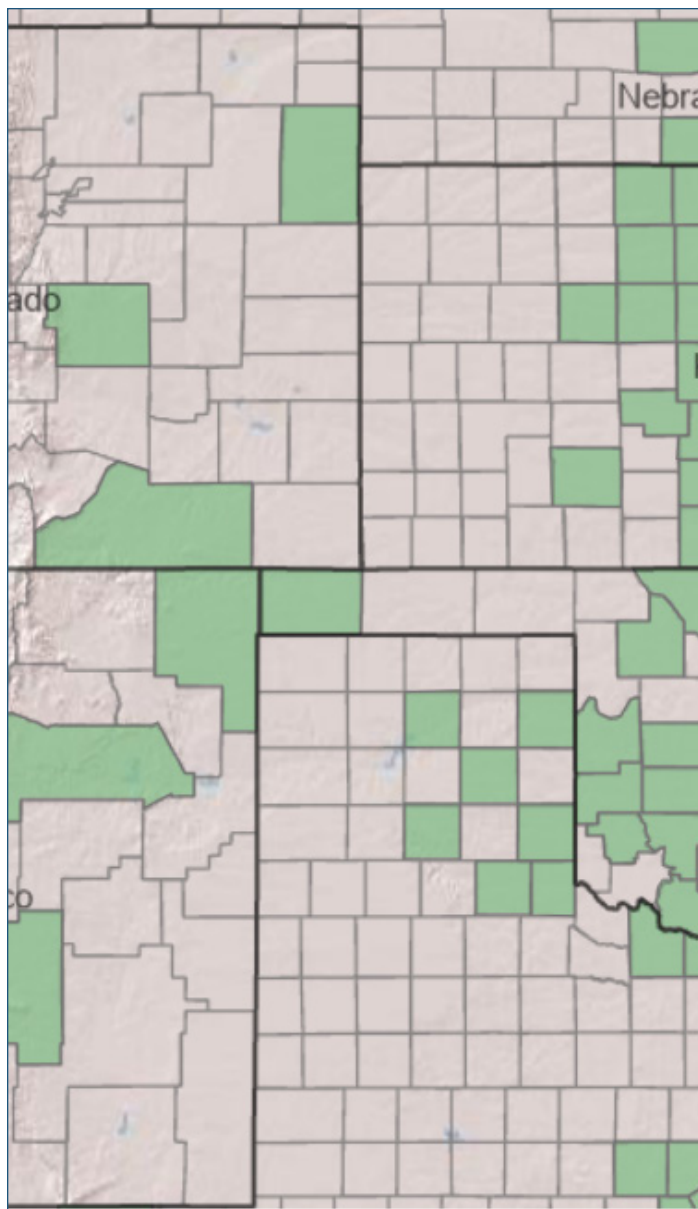




Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Early flowering/close-up view of flower



Photo: Lady Bird Wildflower Center Staff

Seedling



Photo: Lillian G. Flaigg, Lady Bird Johnson Wildflower Center

Early flowering/close-up view



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Fruit



Photo: Barbara Nuffer, Lady Bird Johnson Wildflower Center

Mature fruit with seed

Canada Goldenrod (*Solidago canadensis*)

Aster Family

Other Common Names: Canadian goldenrod, tall goldenrod, giant goldenrod, verge d'or du Canada

Scientific Name: *Solidago canadensis* L.

Plant Symbol: SOCA6

Distinguishing characteristics: Flowering heads small with yellow rays and yellow center; inflorescence terminal and shaped into a broad pyramid with branches bent backwards and the individual flowers oriented upward; leaves alternate on the stem, with 3 main veins, lance-shaped, the upper surface raspy to the touch from short, stiff hairs with bulbous bases; the basal and lower leaves withered at flowering; stems hairy except towards the base of the plant.

Plant Height: 3–6+ feet **Blooms/Fruits:** August–October **Duration:** Perennial, herbaceous (from creeping rhizomes)

Pollinator Value: Goldenrods are very attractive to pollinators and other beneficial insects. They host a number of oligolege bees.

Habitat: Bottomland forests, mesic pastures and prairies, stream and riverbanks, and roadsides.

NOTE: There are many plants commonly called goldenrods that belong to different plant genera, *Solidago*, *Euthamia*, and *Oligoneuron*, and they are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.



Photo: K. Chayka

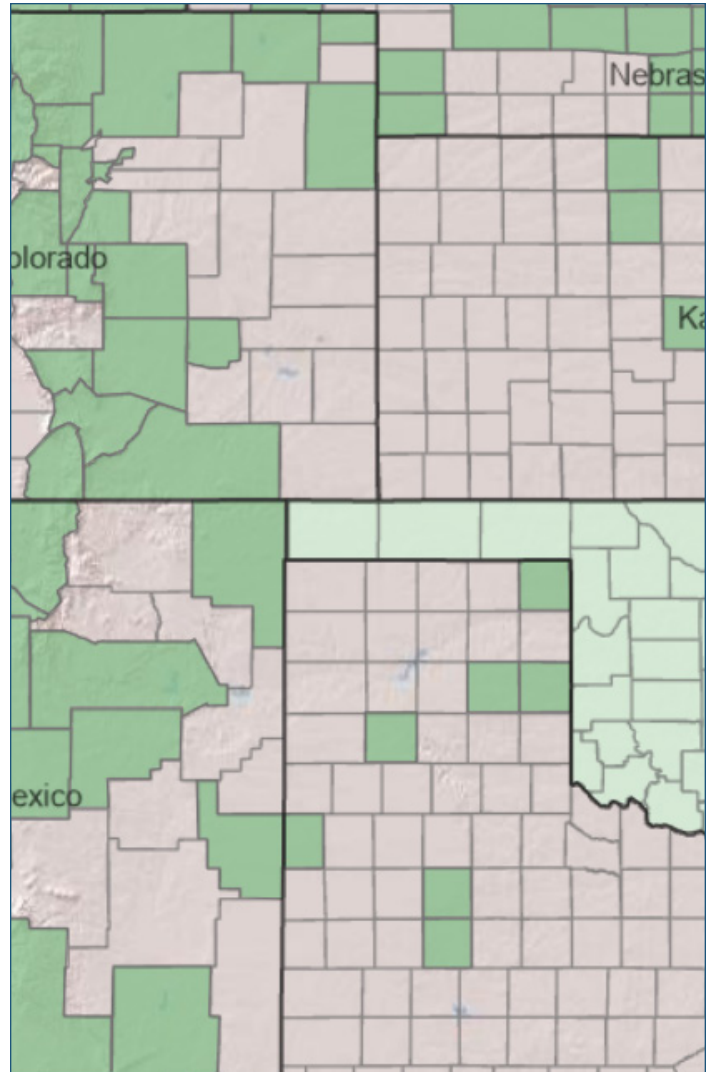




Photo: Peggy Romfh, Lady Bird Johnson Wildflower Center



Photo: Peggy Romfh, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flowers



Photo: K. Chayka



Photo: Peggy Romfh, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement; close up of underside of leaf

Chickasaw plum (*Prunus angustifolia*)

Rose Family

Other Common Names: sandhill plum **Scientific Name:** *Prunus angustifolia* Marshall **Plant Symbol:** PRAN3

Distinguishing characteristics: Ascending to erect, branched; bark grayish brown to reddish brown; reddish wood brown. Branches usually armed, thorns reddish brown to grayish brown. Twigs reddish brown to grayish brown, rigid, glabrous. Leaves deciduous, alternate, simple; blade lanceolate to elliptic, 0.8 to 2.4 inches long, 0.4 to 0.8 inch wide, margins finely serrate; 2–4-flower clusters, usually appearing before leaves; Flowers white; 5 petals. Fruit red or yellowish red, 0.4–0.8-inch wide, single seed.

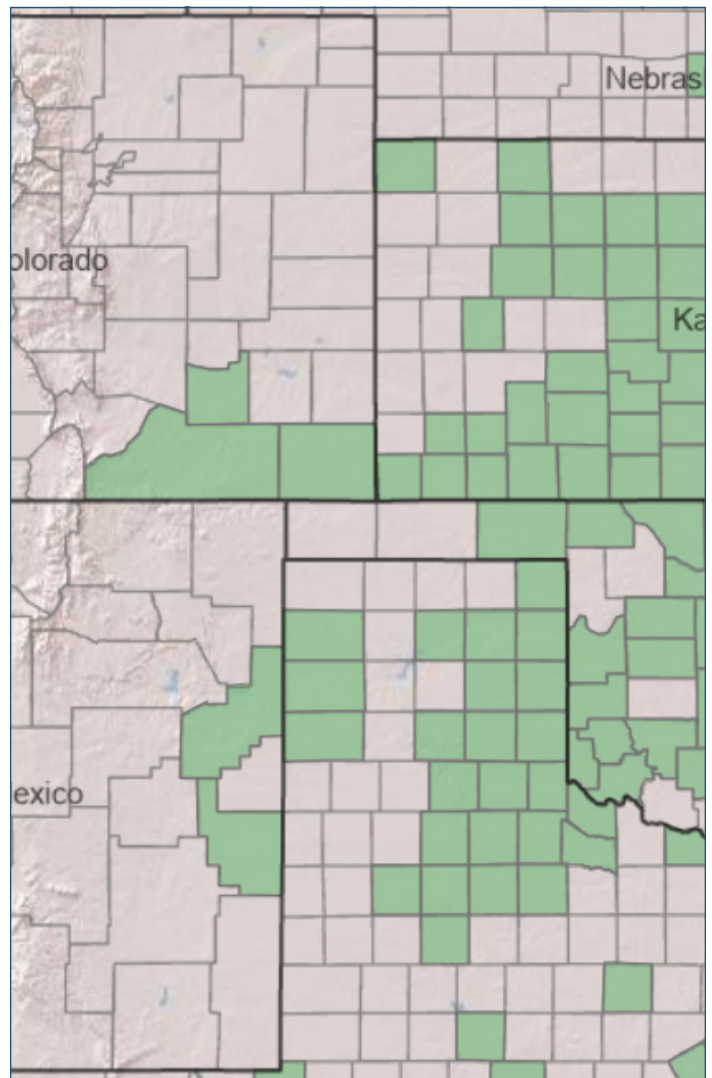
Plant Height: 15–25 feet **Blooms/Fruits:** Blooms April–June; Fruits August–September **Duration:** Perennial, woody

Pollinator Value: This species is of very high value to bumblebees, other native bees, butterflies, moths, beetles, wasps, and flies. It is a butterfly host plant and a moth host plant.

Habitat: Open woodlands, woodland edges, forest openings, savannas, prairies, plains, meadows, pastures, fence rows, roadsides.



Photo: Sally and Andy Wasowski Lady Bird Johnson Wildflower Center





Close-up of flower clusters



Leaf arrangement

Close-up of flower clusters



Close-up of leaf

Close-up of fruit

Common Boneset (*Eupatorium perfoliatum*)

Aster Family

Other Common Names: thoroughwort

Scientific Name: *Eupatorium perfoliatum* L.

Plant Symbol: EUPE3

Distinguishing characteristics: Flower heads white in small fuzzy clusters on a many branched, flat-topped inflorescence; leaves are opposite one another (rarely whorled), hairy, with a pointed tip, and are very distinctive where the leaf bases wrap around the stem and appears as if the stem is growing through the middle of the leaf; stems are densely hairy.

Plant Height: 3–5 feet, erect

Blooms/Fruits: August–October

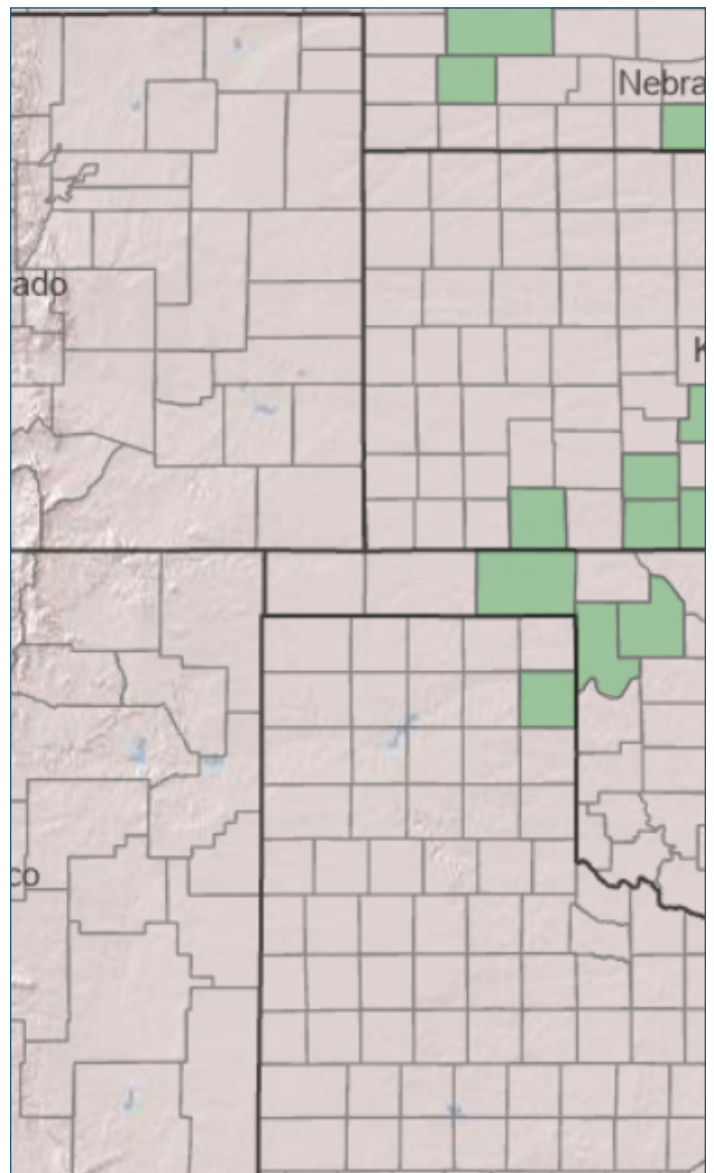
Duration: Perennial, herbaceous

Pollinator Value: This summer through fall blooming flower is highly attractive to butterflies and native bees.

Habitat: Damp low ground, banks of ponds and streams, fens, sloughs, marshes, crop fields, and fallow fields.



Photo: Sally and Andy Wasowski Lady Bird Johnson Wildflower Center





Full flowering/close-up of blooms



Close-up of leaf arrangement

Common Sunflower (*Helianthus annuus*)

Aster Family

Other Common Names: sunflower, Kansas sunflower, mirasol

Scientific Name: *Helianthus annuus* L.

Plant Symbol: HEAN3

Distinguishing characteristics: Flowering heads large with yellow rays and a dark central center disk; leaves alternate but some basal leaves may be opposite, triangular to egg-shaped and very rough or raspy surface; stems solitary with 1 – many flowering heads.

Plant Height: 1–10 feet

Blooms/Fruits: July–October

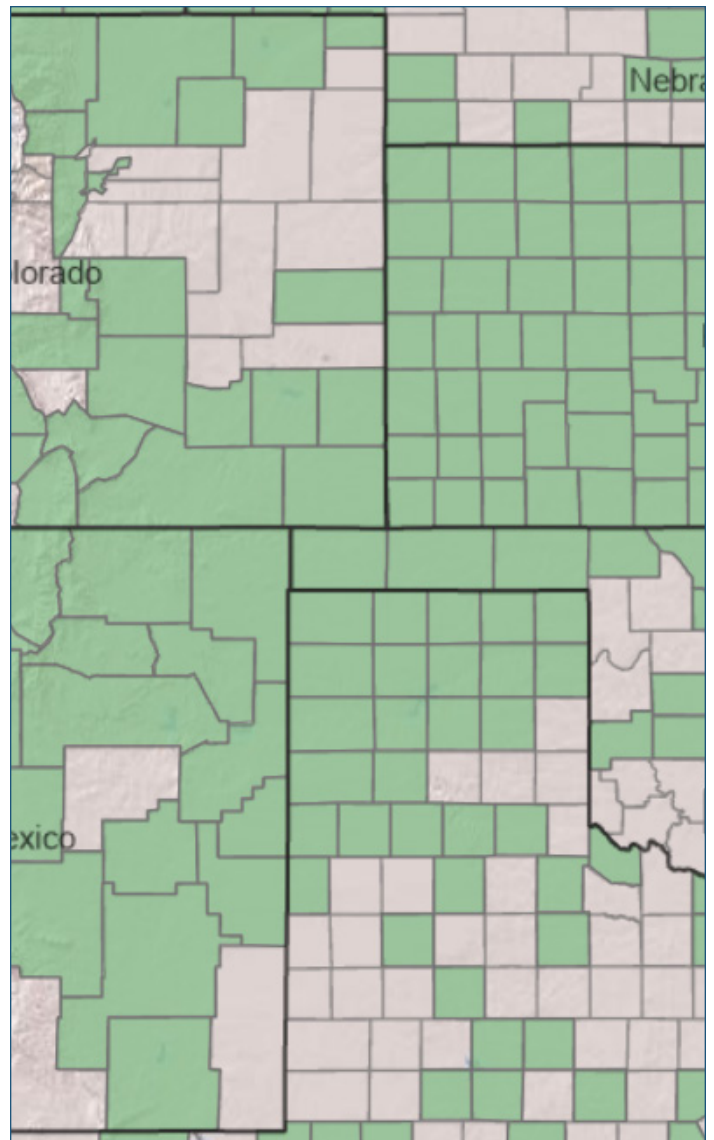
Duration: Annual, herbaceous (with large taproot)

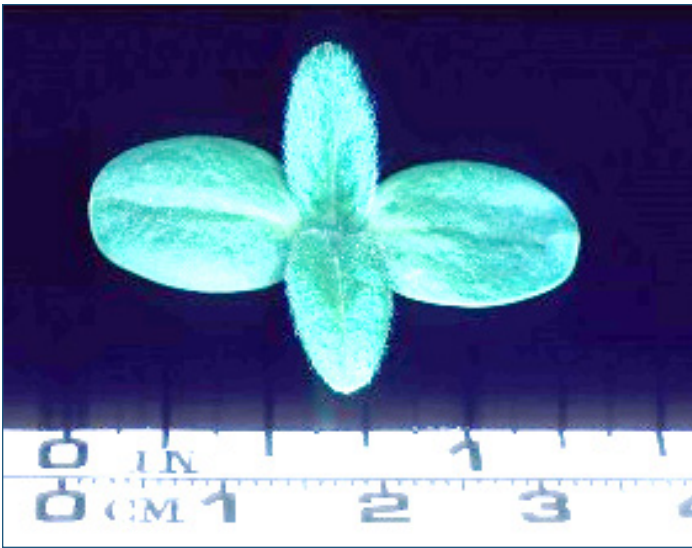
Pollinator Value: Many species of native bee are sunflower specialists, and they frequently nectar and collect pollen from these flowers. Butterflies also nectar on sunflowers.

Habitat: Widespread roadside weed, old fields, ditch banks, upland pastures, field borders, escape from cultivation.



Photo: David Northington, Lady Bird Johnson





Seedling



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close up of flower



Photo: Center Staff, Lady Bird Johnson Wildflower Center

Seedling



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Mature plant



Photo: Kim Yarbrough, Lady Bird Johnson Wildflower Center

Developing flower bud



Photo: Joseph Marcus Lady Bird Johnson Wildflower Center

Close-up of stem

Dakota Mock Vervain (*Glandularia bipinnatifida*)

Verbena Family

Other Common Names: moradilla, prairie verbena, ragweed vervain, wild vervain

Glandularia bipinnatifida (Nutt.) Nutt.

Scientific Name:

Plant Symbol: GLBI2

Distinguishing characteristics: Flowers blue/purple in rounded clusters, each petal with a cleft at the tip; stems with dense bristly hairs, loosely erect with multiple stems from the base, appearing cushion-like; leaves opposite, 2–3x compound to finely dissected.

Plant Height: Up to 2 feet

Blooms/Fruits: March–October

Duration: Perennial

Growth Habit: Forb/herb

Pollinator Value: This plant blooms most of the growing season and is hugely popular with small butterflies and long-tongued bees.

Habitat: Dry plains and prairies, pastures, roadsides, and disturbed areas.



Photo: Joseph Marcus, Lady Bird Johnson Wildflower

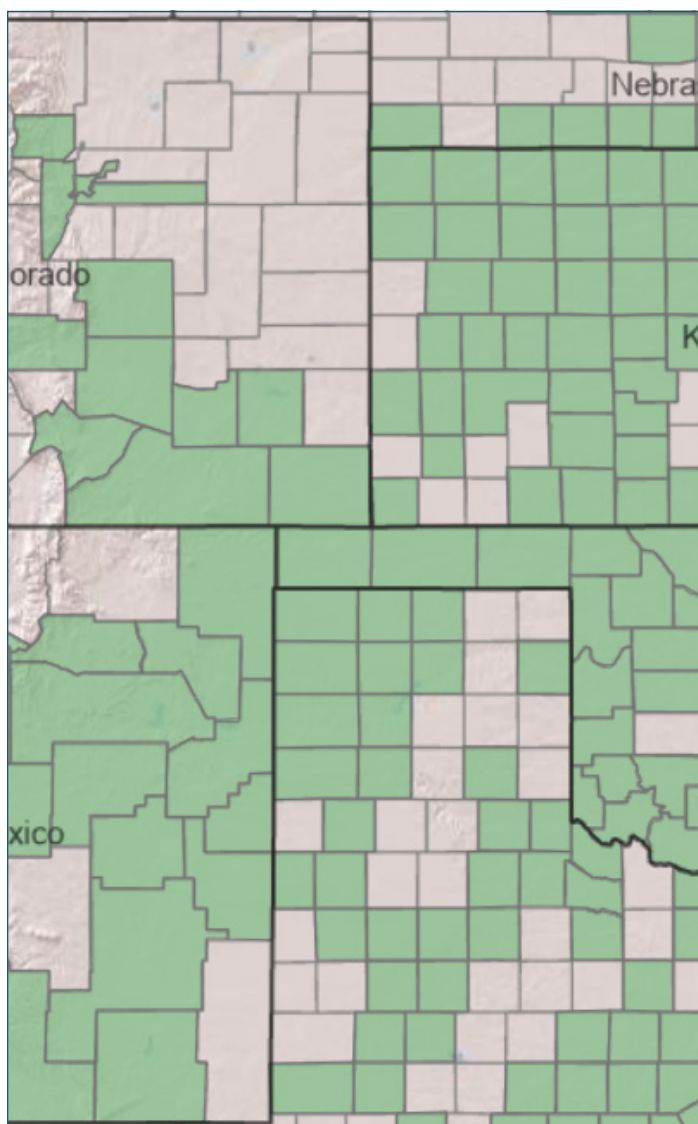




Photo: src.sfasu u.edu

Mature



Photo: Alan Cressler, Lady Bird Johnson Wildflower Center

Close up of flower



Photo: src.sfasu u.edu

Mature plant



Photo: Joseph Marcus Lady Bird Johnson Wildflower Center

Leaf arrangement

Dotted Blazing Star (*Liatris punctata*)

Aster Family

Other Common Names: liatris, narrow-leafed gayfeather, Nebraska blazing star, blazing star, button snakeroot, prairie snakeroot, starwort

Scientific Name: *Liatris punctata* Hook

Plant Symbol: LIPU

Distinguishing characteristics: Clusters of puffy blue flowers loosely spaced along a spike-like inflorescence, inflorescence axis easily visible between the flower clusters; leaves narrow and crowded, slightly up-curved, with dotted glands on the surface.

Plant Height: 1–3 feet, flowering stems

Blooms/Fruits: August–October

Duration: Perennial, herbaceous

Pollinator Value: *Liatris* spp. are very attractive to monarchs and other butterflies. While Rocky Mountain blazing star (*Liatris ligulistylis*) is by far the most attractive species for the monarch butterfly, all *Liatris* can serve as a nectar source. *Liatris* flowers are also favored by bumble bees and others.

Habitat: Common on upland, rocky ridges, grassy and sagebrush prairies, roadsides, in sandy or clayey



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

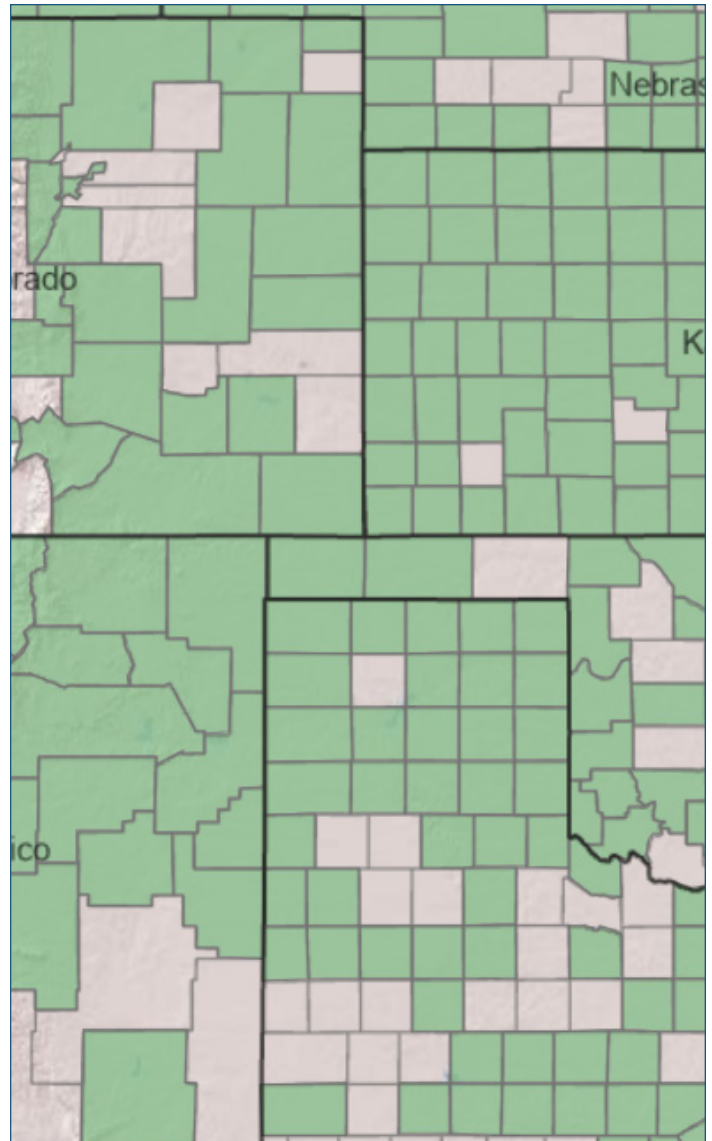




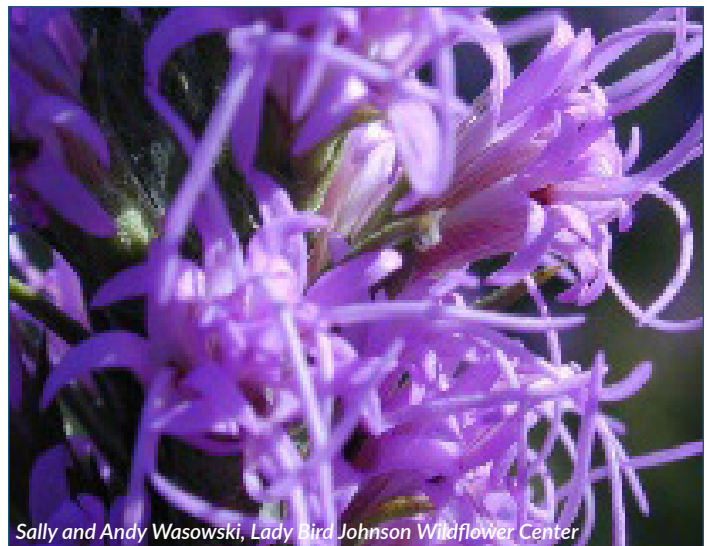
Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Flower buds



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Close up of flower



Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Close view of flowers



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Seed maturation

Downy Ragged Goldenrod (*Solidago petiolaris*)

Aster Family

Other Common Names: downy goldenrod

Scientific Name: *Solidago petiolaris* Aiton

Plant Symbol: SOPE

Distinguishing characteristics: Flowering heads yellow in a many branched inflorescences that is wider towards the bottom and narrower on top; leaves lance-shaped and numerous along the stem, with smooth or widely spaced teeth along the margin; one of the “showier” goldenrods in the region. Plants have slender rhizomes.

Plant Height: 3–5 feet

Blooms/Fruits: August–October

Duration: Perennial

Growth Habit: Forb/herb

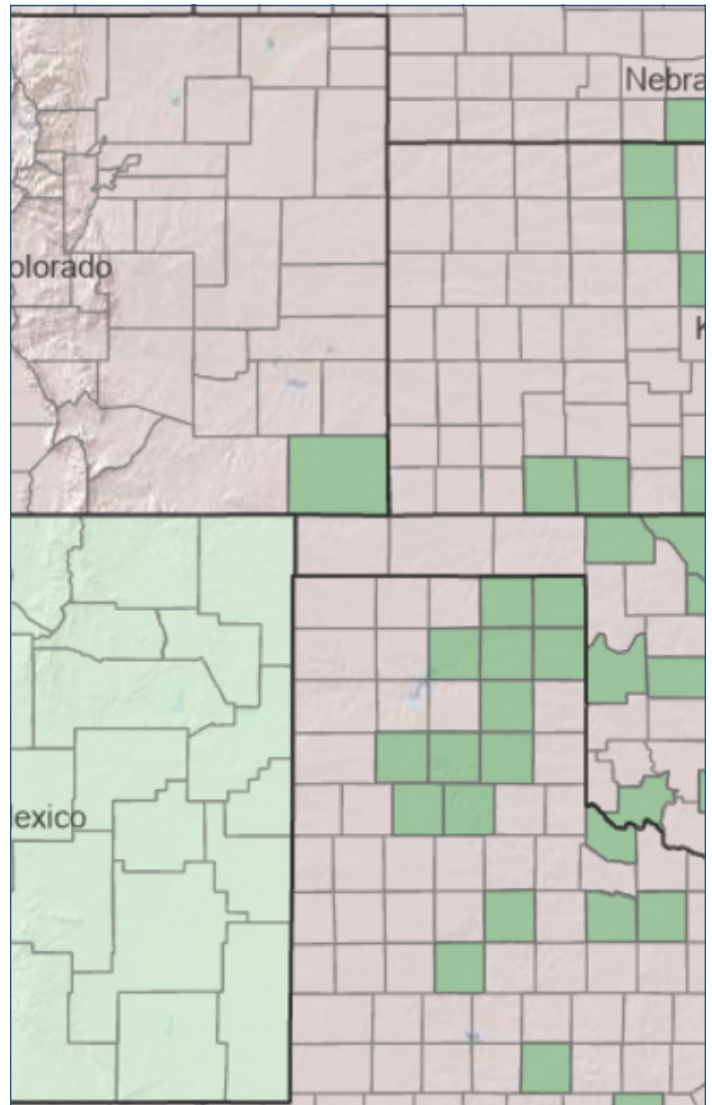
Pollinator Value: Downy ragged goldenrod is a valuable late-season pollen and nectar resource for wasps, bees and butterflies.

Habitat: Woods and open places, bluff escarpments and limestone sites.

NOTE: There are many plants commonly called goldenrods that belong to different plant genera (e.g., *Chrysoma*, *Solidago*, *Euthamia*, and *Oligoneuron*) and are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.



Photo: Mike Haddock, Kansas Stat Univ.





Flowering/close-up of flowers



Close up of flower



Stem and leaf arrangement



Mature plant

Engelmann's Daisy (*Engelmannia peristenia*)

Aster Family

Other Common Names: cuttleleaf daisy

Scientific Name: *Engelmannia peristenia* (Raf.) Goodman & C.A. Lawson

Plant Symbol: ENPE4

Distinguishing characteristics: Stems erect, arising from woody rootstocks, and ridged/grooved along the stem axis; leaves basal in a rosette and alternate along the stem; basal leaves deeply pinnate-lobed and can be persistent in winter; stem leaves few, deeply pinnate-lobed towards the base and with either shallow or no lobes towards the top of the stem, mostly sessile on; inflorescences daisy-like, single or few in a cluster; rays yellow and 7–10 in number; centers yellow.

Plant Height: 2–3 feet
rosette can be persistent

Blooms/Fruits: April–November

Duration: Perennial, herbaceous, and the basal

Pollinator Value: Flowers of this plant are sought by a variety of bees and butterflies.

Habitat: Prairies, open sites, and roadsides.



Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center.

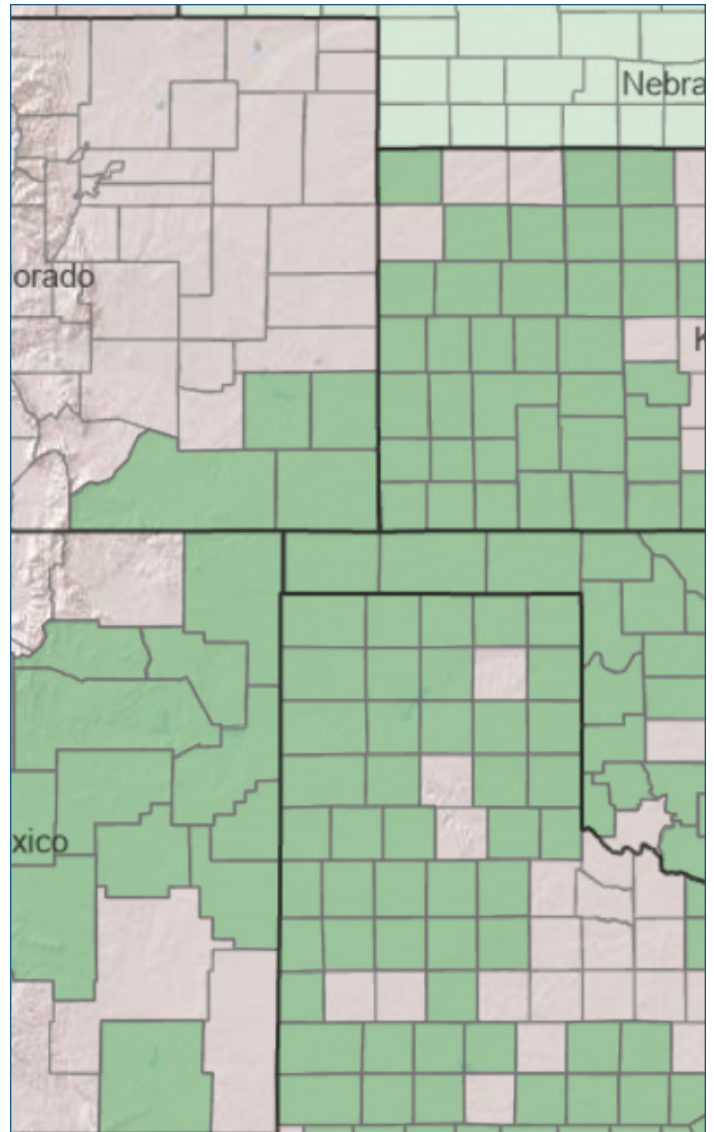




Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Full flowering



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Close up of flower



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Foliage



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Foliage

Engelmann's Milkweed (*Asclepias engelmanniana*)

Milkweed Family

Other Common Names: Englemann's milkweed **Scientific Name:** *Asclepias engelmanniana* Woodson **Plant Symbol:** ASEN

Distinguishing characteristics: Stout stems with from 1 to 4 branches. Leaves close together on the lower third of the stem and grouped into 3's at the nodes as the plant grows; narrow, 1/16–1/8 inch wide, and 8 to 9 inches long at maturity. Several flower clusters grow from the upper nodes. Each cluster contains 20–28 small, pale-green flowers. The corolla is wheel shaped. Petal turns up at the tip and dark brown or purple on underside. The corona rises about ¼ inch tall and is squared at the top. Seeds are oval with a pale tawny, silklike tail about 1 ¼ inches long.

Plant Height: 2–4 feet

Blooms/Fruits: July–September

Duration: Perennial, herbaceous

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies.

Habitat: Highway rights-of-way, prairies, washes and draws, hillsides, caprock ledges and canyon breaks.



Photo: Marion McGlohon, Kansas State Univ. Libraries

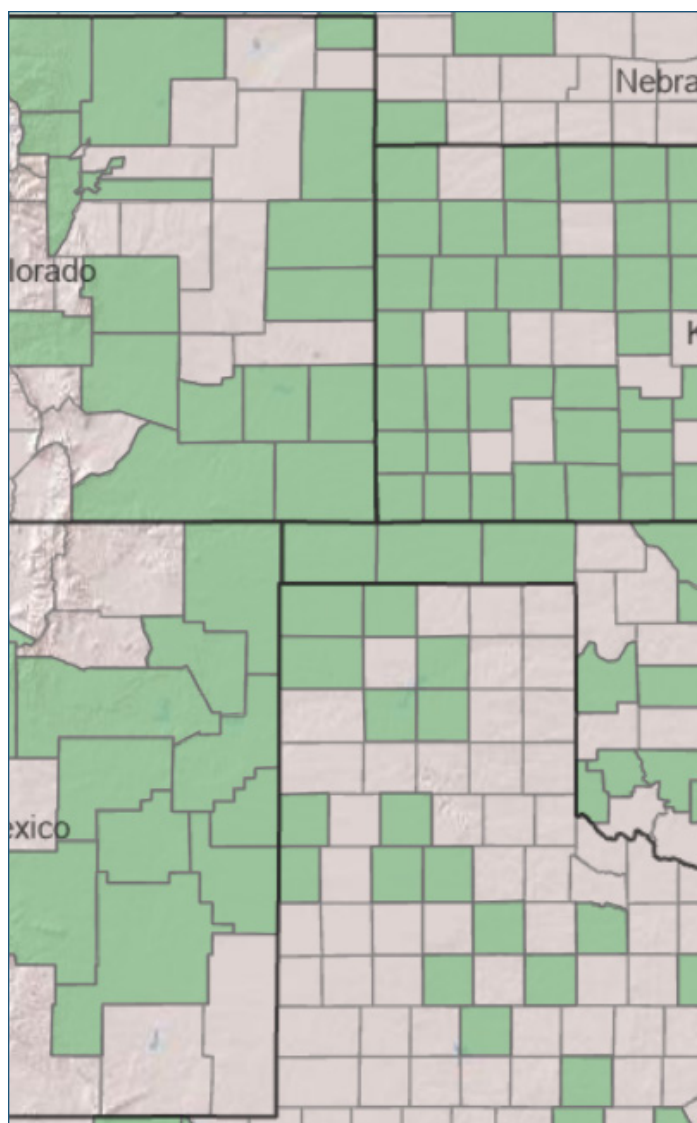




Photo: Marion McGlohon, Kansas State Univ. Libraries



Photo: Marion McGlohon, Kansas State Univ. Libraries

Flower clusters and leaf arrangement on stem



Photo: Sue Smith, Highlands Center for Natural History



Photo: Sue Smith, Highlands Center for Natural History

Flower clusters

Fringed Twinevine (*Funastrum cynanchoides*)

Milkweed Family

Other Common Names: climbing milkweed vine, twinevine

Plant Symbol: FUCY

Scientific Name: *Funastrum cynanchoides* (Decne.) Schltr.

Distinguishing characteristics: Flowers are white-fringed, in loosely rounded clusters, white to pink/purplish-tinged; leaves opposite and heart-shaped to spear-shaped, when crushed have a smell of burning rubber; all parts of the plant exude milky sap when damaged.

Plant Height: climbing vine, up to 10 feet

Blooms/Fruits: April–August

Pollinator Value: Possibly a larval host for the monarch butterfly, it provides nectar for many other lepidopterans.

Habitat: Sandy and rocky soil, riparian, along river washes in the desert.

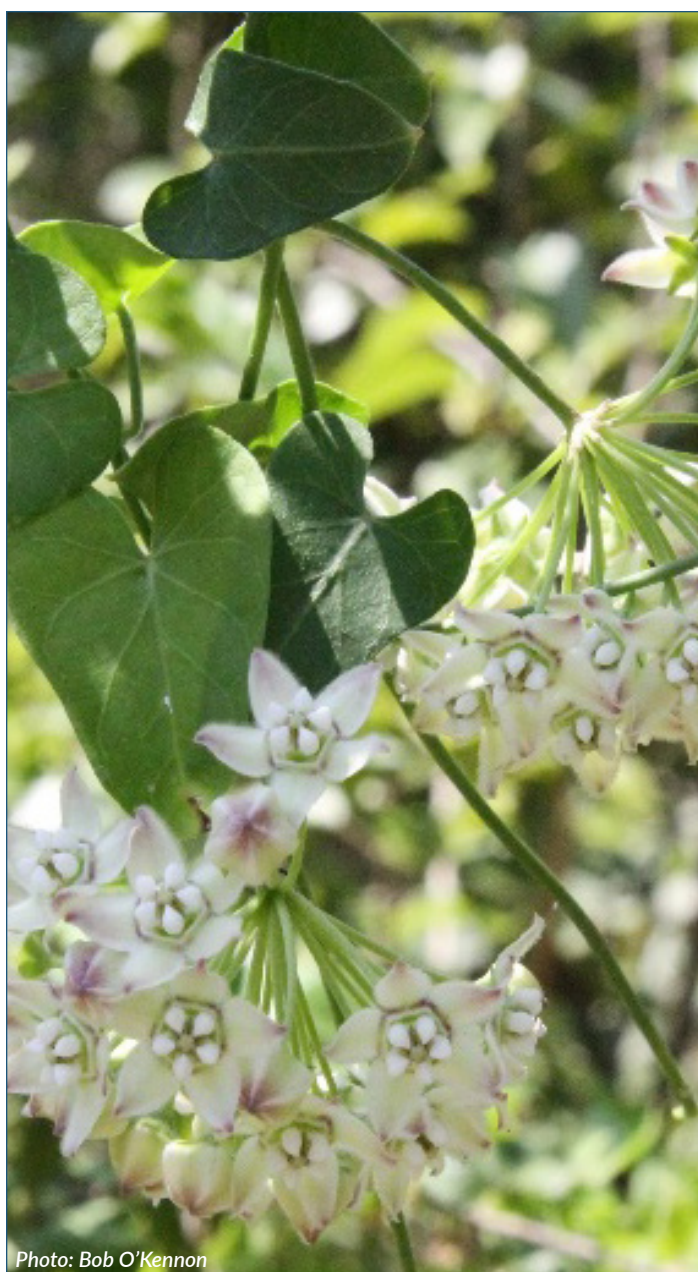


Photo: Bob O'Kennon

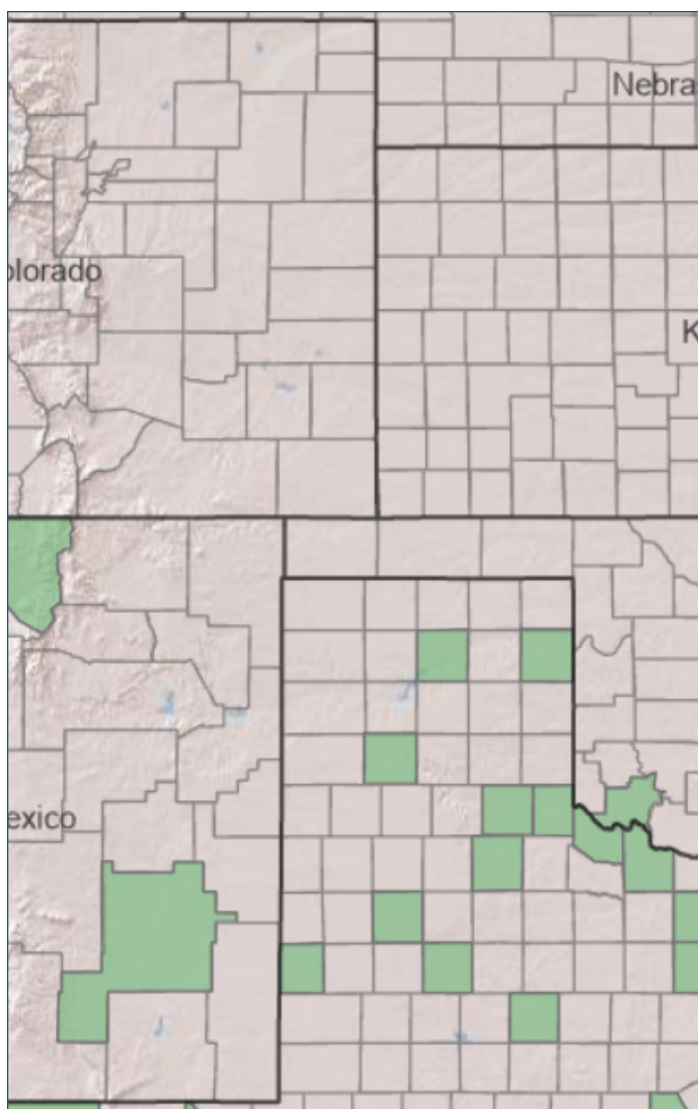




Photo: Julie Marcus, Lady Bird Johnson Wildflower Center

Flowers

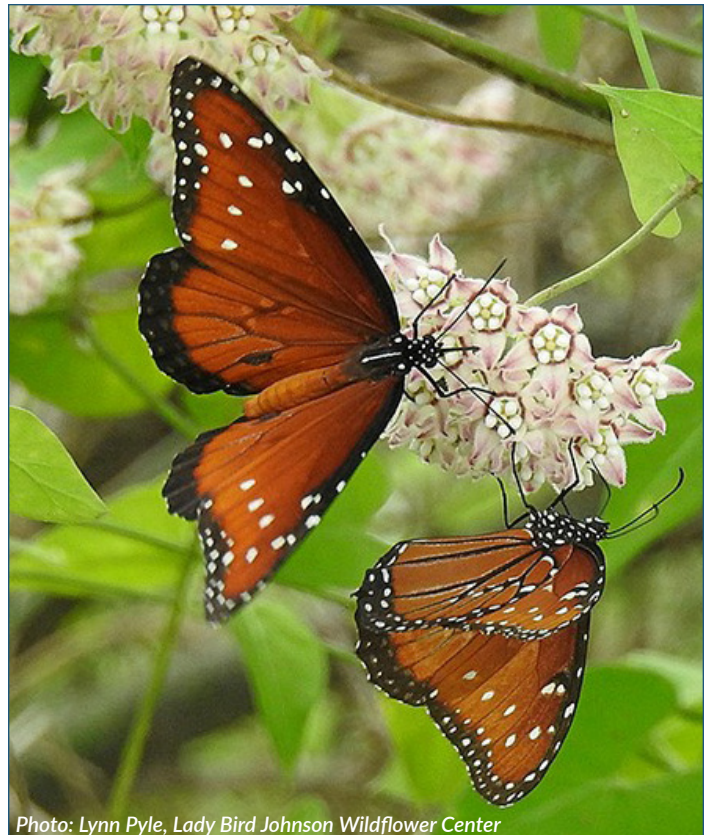


Photo: Lynn Pyle, Lady Bird Johnson Wildflower Center

Leaf shape/arrangement and close-up of flowers



Photo: Lynn Pyle, Lady Bird Johnson Wildflower Center

Fruit/seed pod

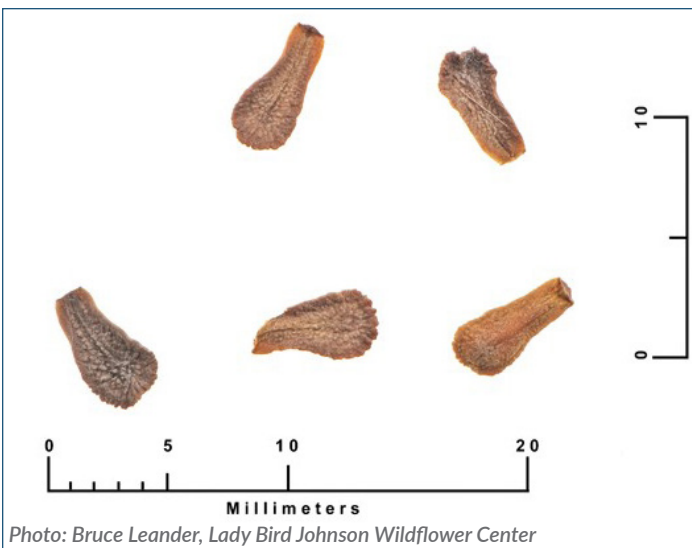


Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Fringed milkweed seed

Golden Crownbeard (*Verbesina encelioides*)

Aster Family

Other Common Names: butter daisy, cowpen daisy, feverweed
A. Gray

Scientific Name: *Verbesina encelioides* (Cav.) Benth. & Hook. f. ex
Plant Symbol: VEEN

Distinguishing characteristics: Yellow flower heads with long floral rays; leaves alternate along the stem, characteristically with two large lobes at the leaf base; stems erect and without leafy “wings” like most other plants in this group. Plants are taprooted.

Plant Height: up to 2.5 feet

Blooms/Fruits: April–October

Pollinator Value: This flower is attractive to butterflies and native bees.

Habitat: Open disturbed areas, sandy soil, crop fields, and roadsides.



Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

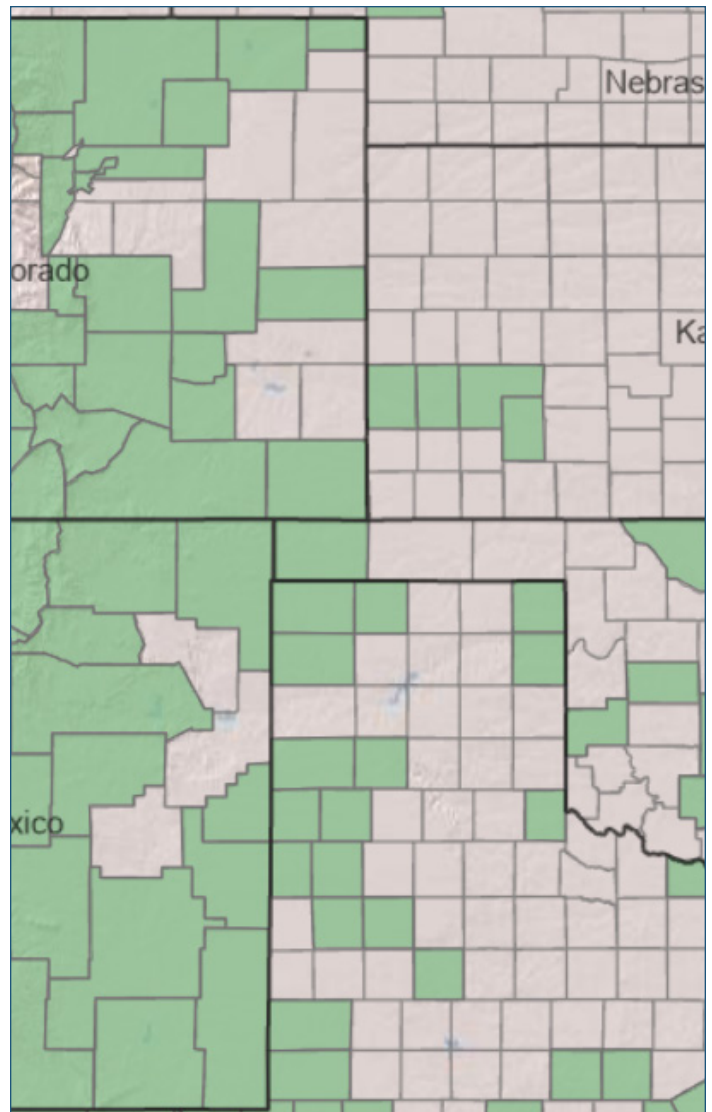




Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Lobed at leaf base



Photo: USDA-ARS

Seed



Photo: Patrick Alexander, Plant database

Leaf

Golden currant (*Ribes aureum*)

Currant Family

Other Common Names: clove currant

Scientific Name: *Ribes aureum* Pursh

Plant Symbol: RIAU3

Distinguishing characteristics: Ascending to erect, glabrous or puberulent to villous; spines and prickles absent. Leaves alternate, simple, 0.75 to 2 inches wide, 3(5) lobed, light green, semi-glossy, without hairs. Flowers tubular, about 0.4 inches long, 5 petals, yellow, turning orange or red with age, fragrant, few to 15 per cluster. Fruit usually red, orange, brown, or black, spherical, 0.2 to 0.4 inch with brown to black seeds.

Plant Height: 3–8 feet

Blooms/Fruits: March–June

Duration: Perennial, woody

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, moths, beetles, wasps, flies and hummingbirds. It is a butterfly host plant and a moth host plant.

Habitat: Moist to dry hillsides and river valleys, and fencerows.



Photo: James Reveal, Lady Bird Johnson Wildflower Center

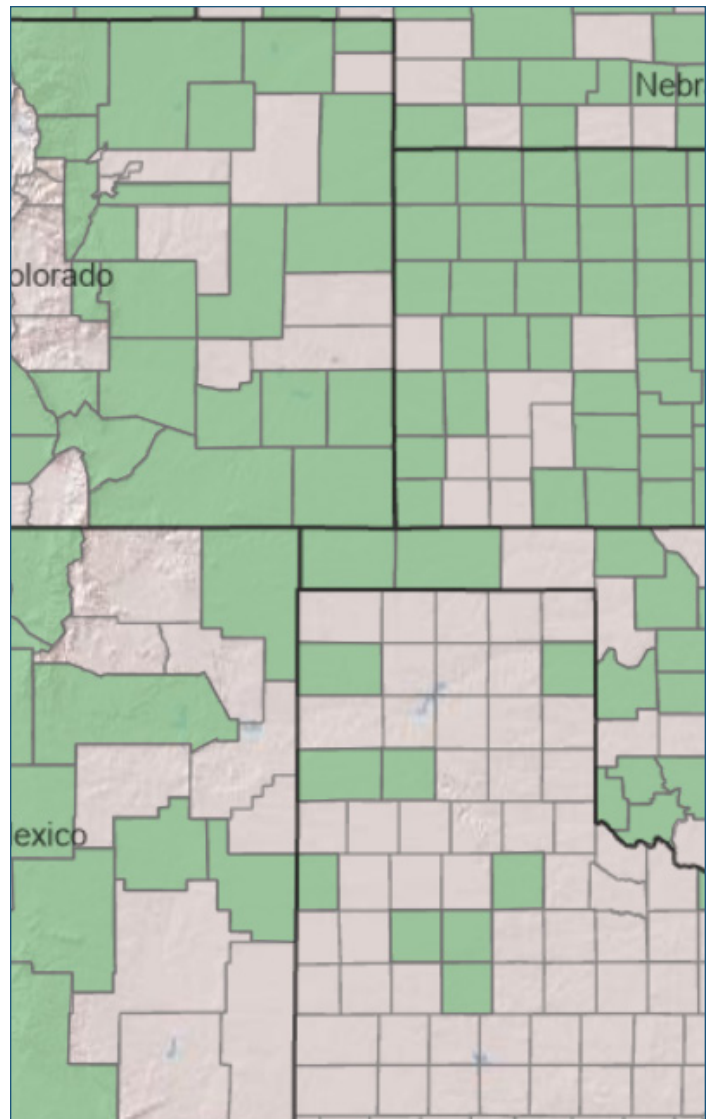




Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Leaves and flowers



Photo: James Reveal, Lady Bird Johnson Wildflower Center

Flower clusters and close-up of flower



Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Flower



Photo: James Reveal, Lady Bird Johnson Wildflower Center

Close-up of leaf



Photo: James Reveal, Lady Bird Johnson Wildflower Center

Fruit

Gray Goldenrod (*Solidago nemoralis*)

Aster Family

Other Common Names: grayleaf goldenrod, dwarf goldenrod, old field goldenrod, prairie goldenrod

Scientific Name: *Solidago nemoralis* Aiton

Plant Symbol: SONE

Distinguishing characteristics: Small yellow flower clusters on recurved terminal branches; stems densely hairy with extremely short, curved hairs; leaves forming a basal rosette and are gradually reduced in size up the stem; leaves oblong, widest towards the top end, with only 1 prominent vein.

Plant Height: 0.5–2.5 feet

Blooms/Fruits: July–November

Duration: Perennial, herbaceous

Pollinator Value: This flower is very popular with bees, wasps, and butterflies of many types. It is known to attract butterflies.

Habitat: Dry upland prairie, ledges and tops of bluffs, openings in dry woods, old fields and pastures.

NOTE: There are many plants commonly called goldenrods that belong to different plant genera (e.g., *Chrysoma*, *Solidago*, *Euthamia*, and *Oligoneuron*) and are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

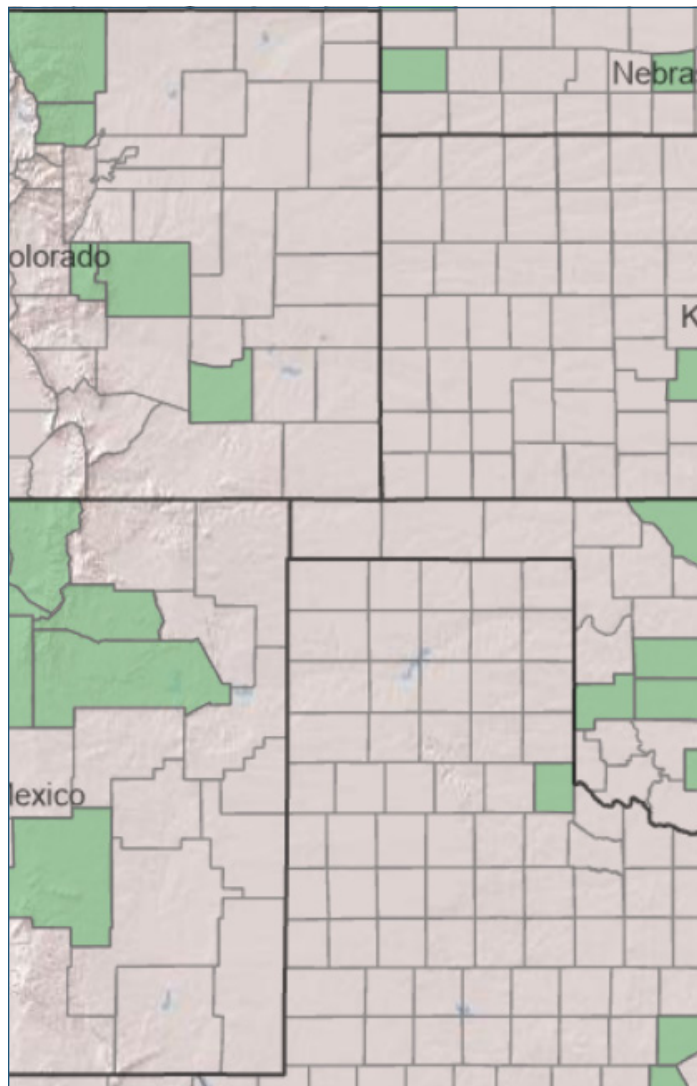




Photo: Ray Matthews, Lady Bird Johnson Wildflower Center

Close-up of Flowers



Photos: Ray Mathews/Bruce Leander, Lady Bird Johnson Wildflower Center

Unopened flowers



Photo: Easy living Native Perennial Wildflowers

Mature plant



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Unopened flowers



Photo: USDA-ARS

Close-up of seeds

Hoary Verbena (*Verbena stricta*)

Verbena Family

Other Common Names: hoary vervain, tall vervain, woolly verbena, wooly verbena

Scientific Name: *Verbena stricta* Vent.

Plant Symbol: VEST

Distinguishing characteristics: Flowers blue to purple on long (up to 1 ft.) terminal spikes, flowering occurs at the bottom of the spike first and progressively flowers upward; leaves are opposite each other on the stem, attached directly to the stem without a leaf stalk, or with a short leaf stalk < 1/4 in. long, shape is widely lance-shaped to almost circular; stems and leaves densely covered with short hairs giving the plant an overall “grayish” appearance.

Plant Height: 1–4 feet, erect to ascending

Blooms/Fruits: June–September

Duration: Perennial, herbaceous

Pollinator Value: This flower is known to attract butterflies. It is also a larval food source for the common buckeye.

Habitat: Upland prairies, loess and sand prairies, open upland forests, overgrazed pastures, old fields, and disturbed areas.



Photo: Peter M. Dziuk

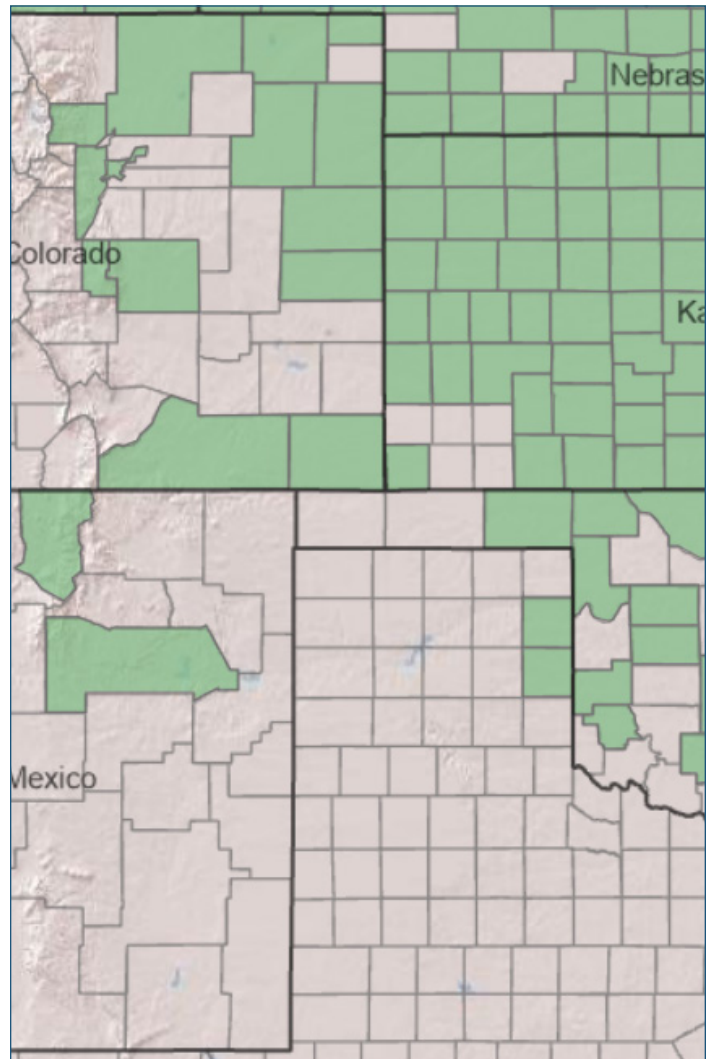




Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



Photo: Mike

Close-up of stem and leaf



Photo: Mike

Close-up of stem and leaf



Photo: Katy Chayka

Mature plant

Horsetail Milkweed (*Asclepias subverticillata*)

Milkweed Family

Other Common Names: poison milkweed, bedstraw milkweed, western whorled milkweed

Scientific Name: *Asclepias subverticillata* (A. Gray) Vail

Plant Symbol: ASSU2

Distinguishing characteristics: Erect, spreading, multiple branches or unbranched. Leaves green, 3 or 4 leaved whorled, blades narrow, lanced shape, linear, short petioles or sub-sessile, margins rolled under or revolute. Flowers white, greenish or purplish; star-like umbels from lateral and upper leaf axillaries, one or two umbels developing from each axil.

Plant Height: 2–3 feet

Blooms/Fruits: May–September

Duration: Perennial, herbaceous

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies.

Habitat: Sandy or rocky plains, shortgrass prairies, open floodplains, desert flats and slopes; common along roadsides.



Photo: Texas A&M Agrilife Extension

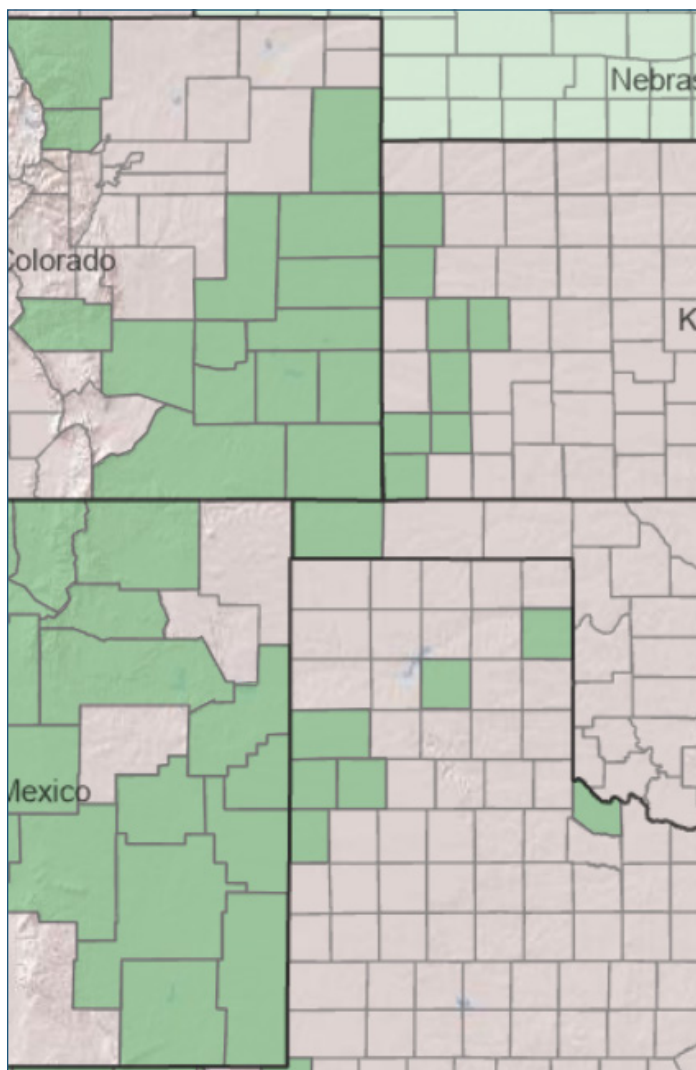




Photo: Texas A&M Agrilife Extension

Foliage/leaf/flower arrangement



Photo: Marion McGlohon, Kansas State Univ. Libraries

Foliage/leaf/flower arrangement



Photo: Texas A&M Agrilife Extension

Seed pods



Photo: Alan Cressler, Lady Bird Johnson Wildflower Center

Close-up of flower

Indian blanket (*Gaillardia pulchella*)

Aster Family

Other Common Names: firewheel, girasol rojo

Scientific Name: *Gaillardia pulchella* Foug **Plant Symbol:** GAPU

Distinguishing characteristics: Hairy stems and leaves; leaves alternate, lanceolate, with rounded-toothed lobes (sometimes unlobed) in upper portion of leaf; Seed head occurs at the tips of elongated, hairy flowering stems and are about 1-2 inches across; heads have 8-14 ray petals that are orange to red at their base, and yellow and lobed at their tips; the 40-100 or more disk florets are yellow fading to reddish-purple. Bracts below the inflorescence are green, hairy, with toothed margin.

Plant Height: 1-2 feet

Blooms/Fruits: May-September

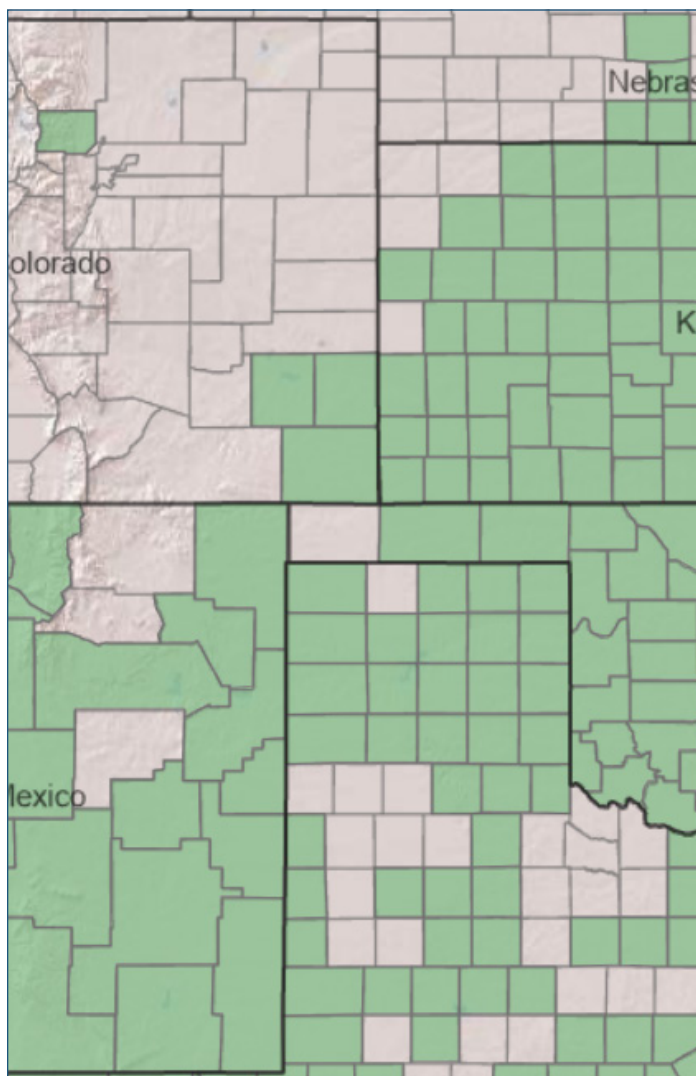
Duration: Annual, biannual, perennial, herbaceous

Pollinator Value: This species is of high value to native bees, bumblebees, honeybees, beetles, wasps, flies; butterflies. It is a larval host for a butterfly species and a moth species.

Habitat: Prairies, pastures, rangeland, sandy or limestone soils.



Photo: Melody Lytle, Lady Bird Johnson Wildflower Center



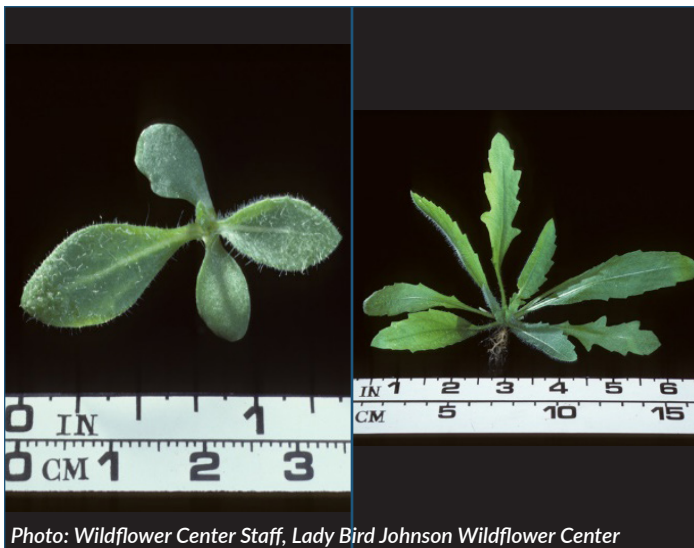


Photo: Wildflower Center Staff, Lady Bird Johnson Wildflower Center

Seedling



Photo: Bruce Leander, Lady Bird Johnson Willower Center

Close up of flower



Photo: Joseph Marcus, Lady Bird Johnson Willower Center

Stem and leaf



Photo: Borden Trewatha, Missouri State Univ.

Full bloom



Photo: Borden Trewatha, Missouri State Univ.

Post flowering



Photo: Wynn Anderson, Lady Bird Johnson Willower Center

Close-up of front and backside of flower

Lead plant (*Amorpha canescens*)

Pea Family

Other Common Names: lead plant amorpha, prairie shoestring

Scientific Name: *Amorpha canescens* Pursh

Plant Symbol: AMCA6

Distinguishing characteristics: Flowers small and purple in narrow, elongate terminal spike-like inflorescences, and unlike most pea flowers lead plant has only a banner petal; leaves are covered with short dense hairs giving the plant its distinctive grayish appearance (lead color), leaves are compound with 15–20 pairs of leaflets and a single terminal leaflet; taproots very deep, extending to 4 ft.

Plant Height: 1–3 feet, ascending

Blooms/Fruits: May–August

Duration: Perennial, woody short shrub/subshrub

Pollinator Value: Highly attractive to native bees. Provides nectar and pollen in the summer.

Habitat: Upland prairies, loess hill prairies, openings in dry upland forests, pastures, and roadsides.



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

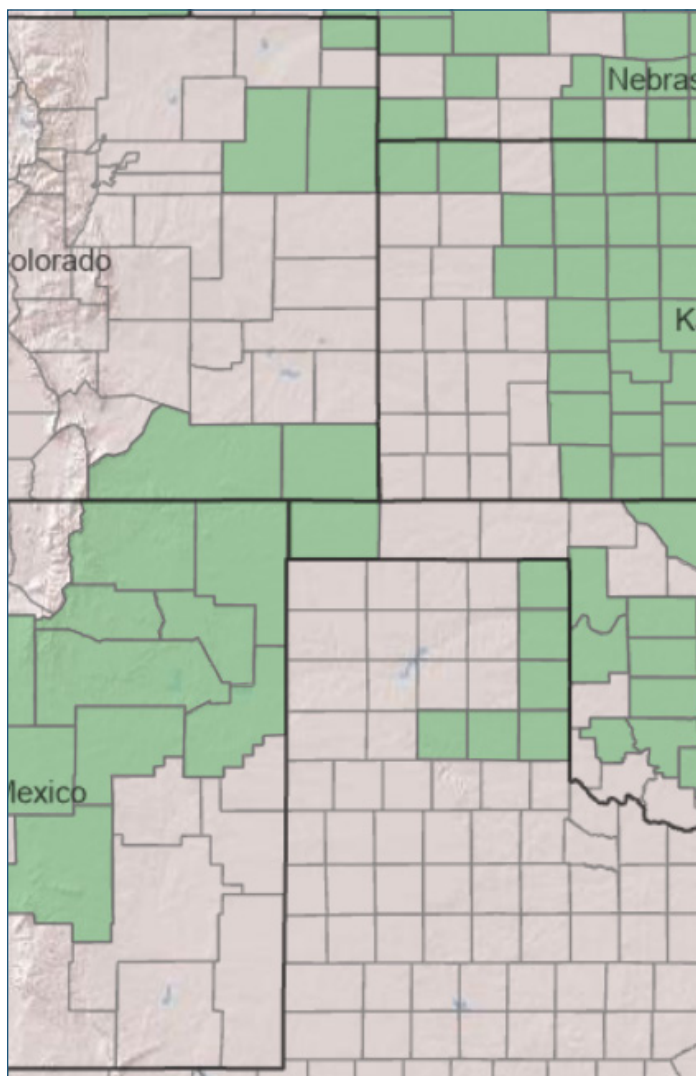




Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Mature flower head



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Close-up of leaflets and vegetative growth



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center

Close-up of leaflets and vegetative growth



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms

Leavenworth's Eryngo (*Eryngium leavenworthii*)

Carrot Family

Other Common Names: eryngo, false purple thistle

Plant Symbol: ERLE11

Scientific Name: *Eryngium leavenworthii* Torr. & A. Gray

Distinguishing characteristics: A tall, prickly plant with flower heads resembling small pineapples or teasel, almost all parts of the plant tinged with purple; flowers inconspicuous in spiny, purple, conical heads with a tuft of spiny leaves on the top; leaves purple tinged, deeply lobed or dissected, each lobe spine tipped.

Plant Height: 1–3 feet

Blooms/Fruits: July–October

Duration: Annual

Growth Habit: Forb/herb

Pollinator Value: This plant is attractive to bees and beneficial insects.

Habitat: Prairies, disturbed areas, open woodlands; preference for calcareous soils.

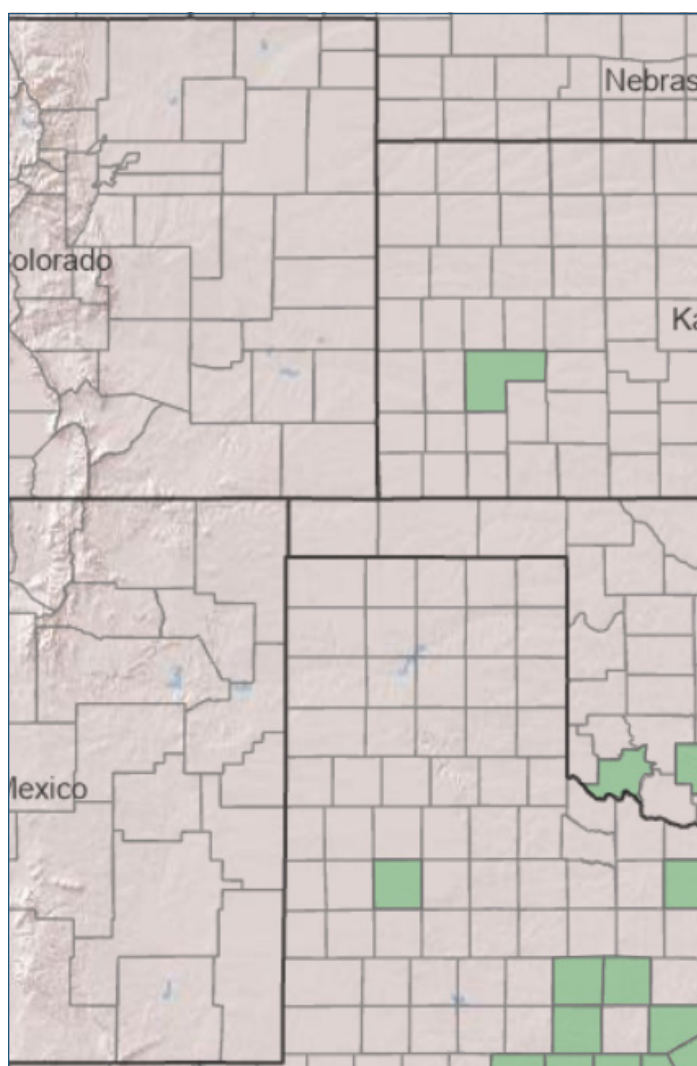




Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center

Close-up of inflorescence



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full Flowering



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement

Lemon Beebalm (*Monarda citriodora*)

Mint Family

Other Common Names: purple horsemint, lemon mint, plains horsemint, lemon horsemint, horsemint, purple lemon mint

Scientific Name: *Monarda citriodora* Cerv. Ex Lag.

Plant Symbol: MOCI

Distinguishing characteristics: Stems erect, moderately to densely hairy, and usually branched; leaves opposite on the stem, lance shaped, with a very short leaf stem (less than ½ in.), the leaves taper to a point at the top and the base, and the margins have widely spaced teeth; flowers are in 1— several ball-like flower clusters toward the top of the stem, color is white to pinkish to pinkish-purple; each flower is two-lipped with the upper lip arched downward, the lower lip with dark purple spots or lines.

Plant Height: 1–2 feet

Blooms/Fruits: May–July

Duration: Annual, herbaceous

Pollinator Value: Known to be visited by bumble bees and butterflies.

Habitat: Upland prairies, openings in upland forests, bluffs, roadsides, and open disturbed areas.



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

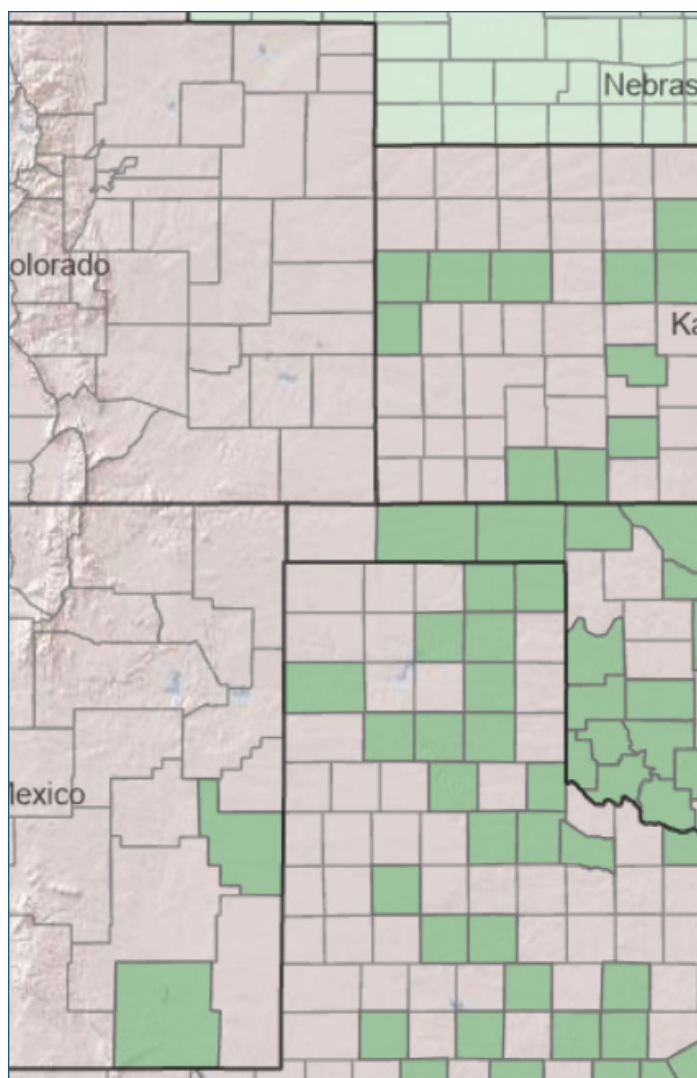




Photo: Wildflower Staff, Lady Bird Johnson Wildflower Center

Seedling



Photo: Wildflower Staff, Lady Bird Johnson Wildflower Center

Close up of flower



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full flowering



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Close-up of flowers



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Close-up of flowers



Close-up of foliage

Maximillian Sunflower (*Helianthus maximiliani*)

Aster Family

Other Common Names: Max sunflower

Scientific Name: *Helianthus maximiliani* Schrad.

Plant Symbol: HEMA2

Distinguishing characteristics: flower head similar to common sunflower; tall, leafy unbranched stems; long, narrow leaves up to 10 inches, coarse and hairy, and slightly toothed and pointed.

Plant Height: 3–10 feet, erect

Blooms/Fruits: August–November

Duration: Perennial, herbaceous

Pollinator Value: Many species of native bee are sunflower specialists and they frequently nectar and collect pollen from these flowers. Butterflies also nectar on sunflowers.

Habitat: Adapted too many soil types, from sands to clays; favors good internal drainage and sunny locations.



Photo: David Northington, Lady Bird Johnson

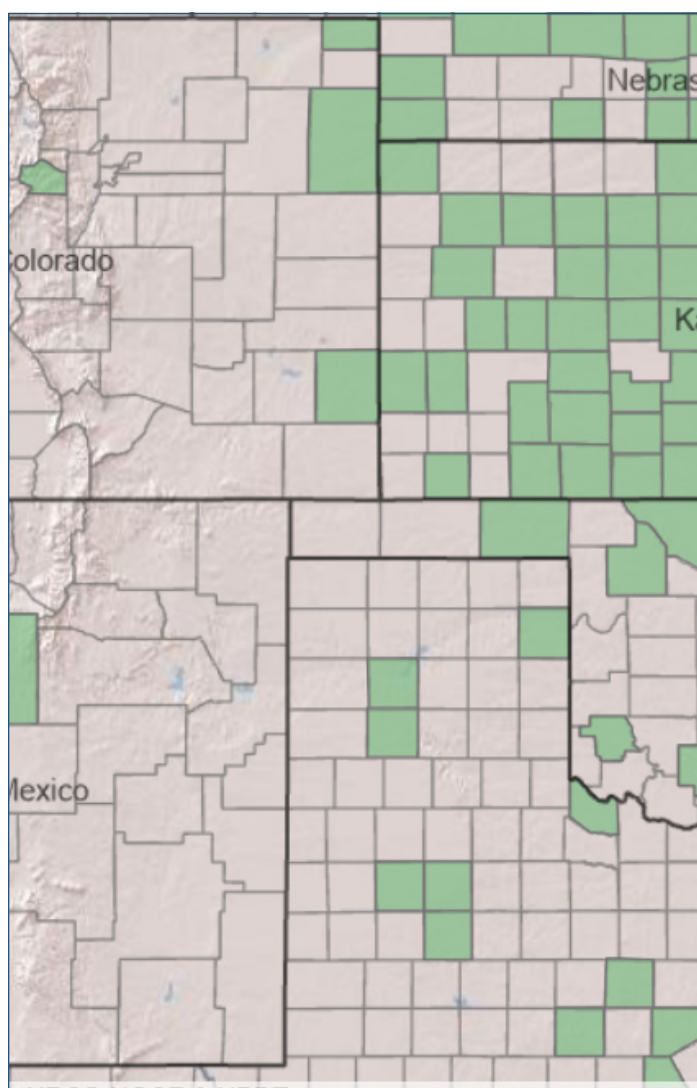




Photo: Lady Bird Johnson Wildflower Center Staff

Seedling



Photo: USDA-NRCS

Close up of flower



Photo: USDA-NRCS

Mature plant



Photo: USDA-NRCS

Late vegetative



Photo: USDA-NRCS

Mature plant

Narrowleaf Purple Coneflower (*Echinacea angustifolia*)

Aster Family

Other Common Names: black samson echinacea, narrow-leaf purple coneflower, narrow-leaf echinacea

Scientific Name: *Echinacea angustifolia* DC.

Plant Symbol: ECAN2

Distinguishing characteristics: Large flowering heads with pale pink to purple drooping ray petals and a dark, conical, center beset with strong, stout spine-like projections; stem leaves very narrow, covered with short, stiff hairs that have swollen pustular bases, very rough to the touch.

Plant Height: 2–3 feet, erect

Blooms/Fruits: May–July

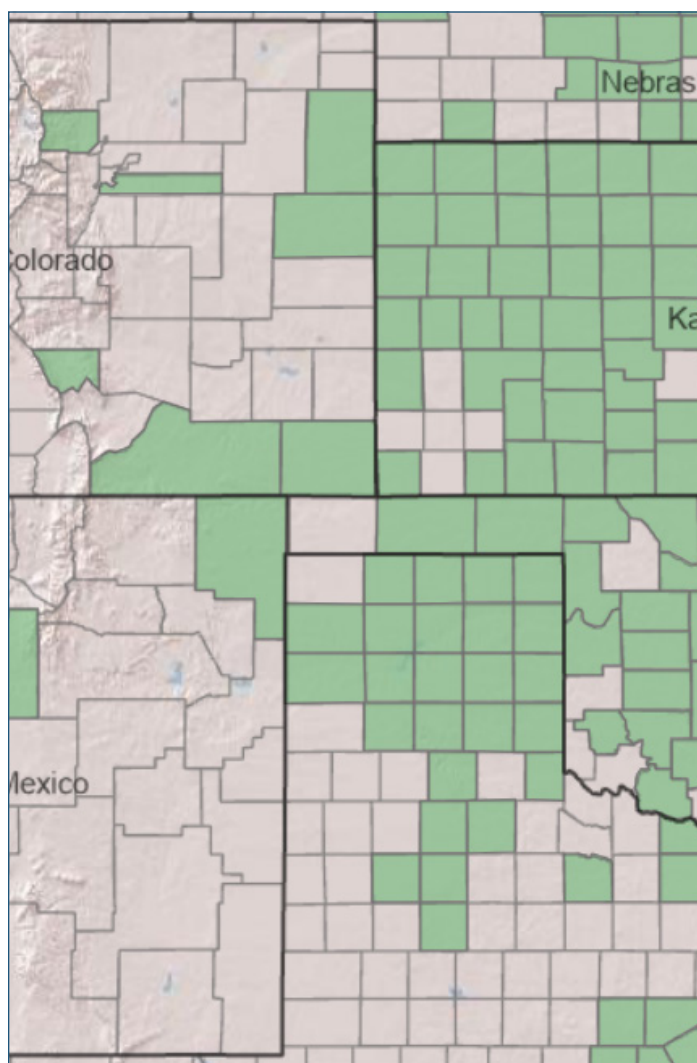
Duration: Perennial, herbaceous

Pollinator Value: Black samson echinacea is self-incompatible, and it is attractive to a variety of insect pollinators. It is especially popular with butterflies and long-tongued bees.

Habitat: Dry open prairies, barrens, rocky to sandy-clay soils.



Photo: Mike Haddock





Photos: Lady Bird Johnson Wildflower Center Staff

Seedlings



Photo: John Hilty, Illinois Wildflower

Full flowering



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Early flower development



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Mature flower head



Photo: Peter M. Dziuk

Leaf arrangement



Photo: John Hilty, Illinois Wildflower

Close-up of leaf arrangement

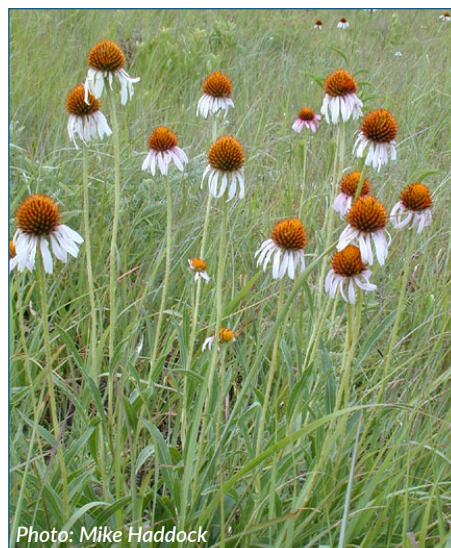


Photo: Mike Haddock

Habit of black samson Echinacea at flowering

Narrowleaf Stoneseed (*Lithospermum incisum*)

Borage Family

Other Common Names: golden puccoon, fringed puccoon, narrowleaf puccoon, narrow-leaved puccoon, puccoon, narrowleaf gromwell, fringed gromwell

Scientific Name: *Lithospermum incisum* Lehm.

Plant Symbol: LIIN2

Distinguishing characteristics: Stems 1 to several from rhizomes or short woody rootstocks; leaves alternate on the stem, narrowly lance-shaped, 1–1 ½ in. long × ¼ in. wide, pointed at the tip and base; flowers of two kinds, showy and non-showy; showy flowers in terminal inflorescences, each flower a yellow tube with 5 yellow and strongly fringed petal-lobes, although these are showy and attract pollinators their seed production is very low; non-showy flowers are minute, in the axils of the leaves, never open, are produced after the showy flowers fade, and are self-pollinating and very fertile.

Plant Height: 0.5–1.5 feet

Blooms/Fruits: April–June

Duration: Perennial, herbaceous

Pollinator Value: Very little has been reported about floral visitors to this species. One source indicated that it is visited by butterflies more than by other insects.

Habitat: Prairies, loess prairies, limestone soils, open woodlands, and roadsides.



Photo: Mike Haddock

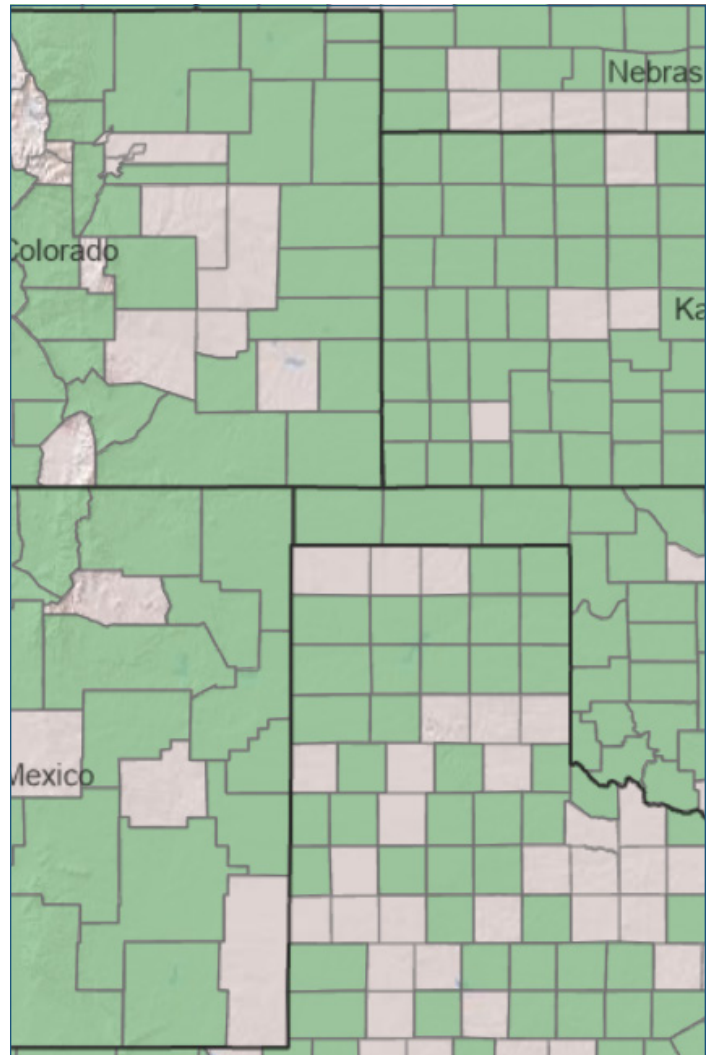




Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seed



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Leaf/foliage



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Full Flowering



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Close-up of flowers

New England Aster (*Symphotrichum novae-angliae*)

Aster Family

Other Common Names: none

Scientific Name: *Symphotrichum novae-angliae* (L.) G.L. Nesom

Plant Symbol: SYNO2

Distinguishing characteristics: Flower heads in many branched inflorescences; rays numerous (40–100) in each flower head, reddish-purple to purple and the disc reddish-purple; the leaves are widest at the ends, with a blunt tip and tapering base that clasps the stem, with 3-main veins per leaf, the middle and lower leaves absent at flowering; stems are hairy with interspersed gland-tipped hairs, 1 to several from the base and branched towards the top.

Plant Height: 2–5 feet, erect **Blooms/Fruits:** July–October **Duration:** Perennial, herbaceous (with woody rootstock and rhizomes)

Pollinator Value: These flowers provide abundant nectar and pollen in the fall. They attract butterflies. There are a number of aster—oligolege bees that feed on the pollen.

Habitat: Bottomland prairies, moist depressions, fens, stream banks, pastures, fencerows, and roadsides.



Photo: Steve Eggers

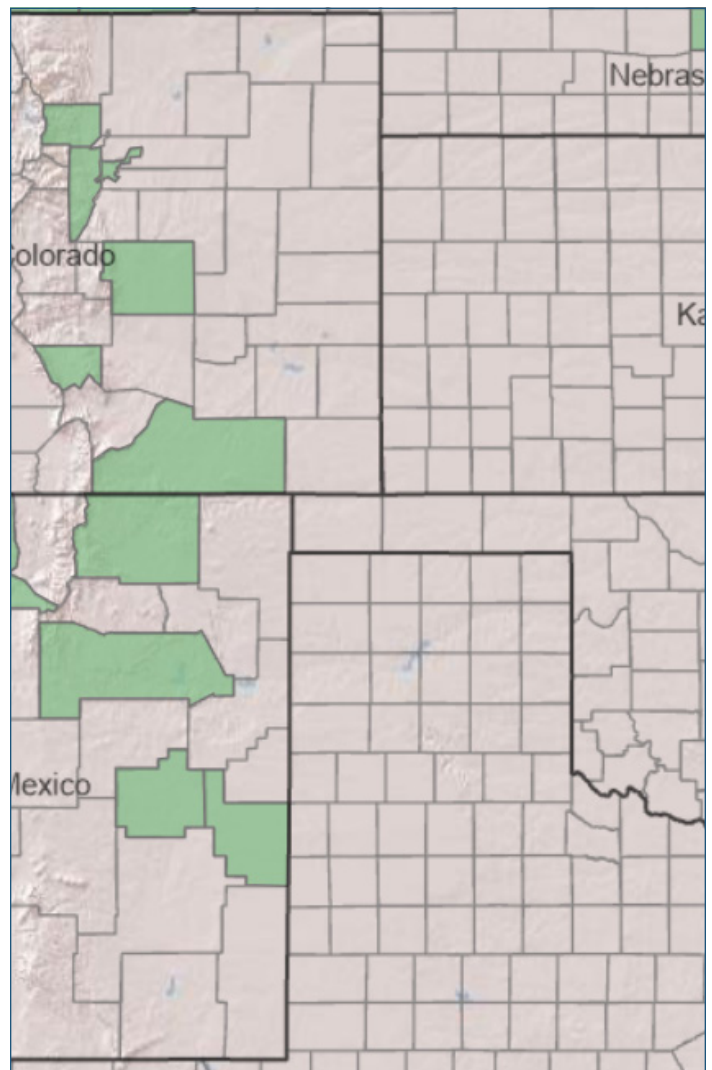




Photo: USDA-NRCS

Seedling



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close-up of blooms



Photo: USDA-NRCS

Stem and leaf arrangement



Photo: USDA-NRCS

Seedling

Nuttall's sunflower (*Helianthus nuttallii*)

Aster Family

Other Common Names: none

Scientific Name: *Helianthus nuttallii* Torr. & A. Gray

Plant Symbol: HENU

Distinguishing characteristics: One to 6 flowers at the top of the plant with 2 or 3 clustered at the stem. Flowers 2 to 3 inches across with 10 to 21 ray flowers (petals) and yellow center disk flowers. Leaves 2 to 8 inches long and to 1½ inches wide, narrowly lance to egg-shaped, toothless to shallowly toothed, pointed to blunt at the tip, wedge-shaped to somewhat rounded at the base. Upper leaf surface is hairless or with a few short hairs. Stems are erect, hairless to sparsely short-hairy, green to yellowish or sometimes purplish. Plants have short rhizomes and tuberous roots.

Plant Height: 3–8 feet

Blooms/Fruits: August–November

Duration: Perennial, herbaceous

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies. It is a butterfly host plant and a moth host plant.

Habitat: moist to wet meadows, prairies, and open spaces.



Photo: Sally and Wasowski Lady Bird Johnson Wildflower Center

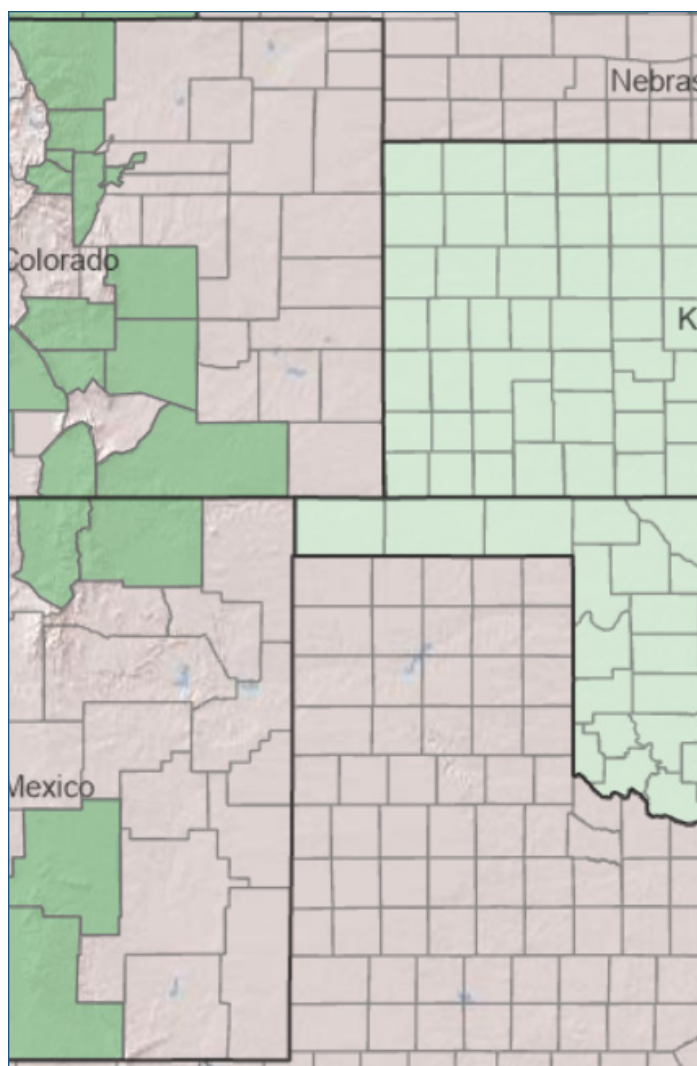




Photo: Peter M. Dziuk

Leaf arrangement



Photo: Peter M. Dziuk

Close-up of leaf



Photo: Katy Chayka

Close-up of stem



Photo: Katy Chayka

Close-up of flower

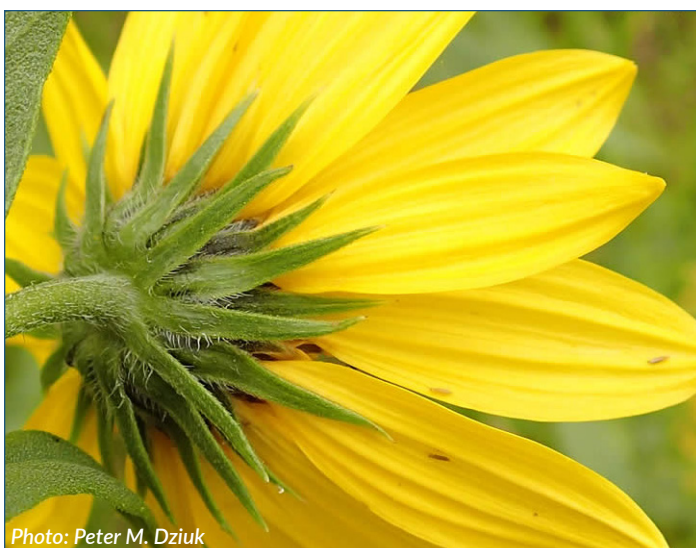


Photo: Peter M. Dziuk

Underside of flower



Flowers

Pennsylvania Smartweed (*Polygonum pensylvanicum*)

Smartweed Family

Other Common Names: common smartweed, pink smartweed

Scientific Name: *Polygonum pensylvanicum* (L.)

Plant Symbol: POPE2

Distinguishing characteristics: Flowers greenish white, white, or pink borne on terminal stalks and in the axils of the upper leaves; inflorescence erect, often slightly drooping; stems have a papery sheath (ocrea) growing above the leaf joints, top of the sheath is smooth and lacks hairs or bristles; leaves arrow-shaped, with or without a reddish chevron.

Plant Height: 0.5–6 feet, varies

Blooms/Fruits: May–November

Duration: Annual

Growth Habit: Forb/herb

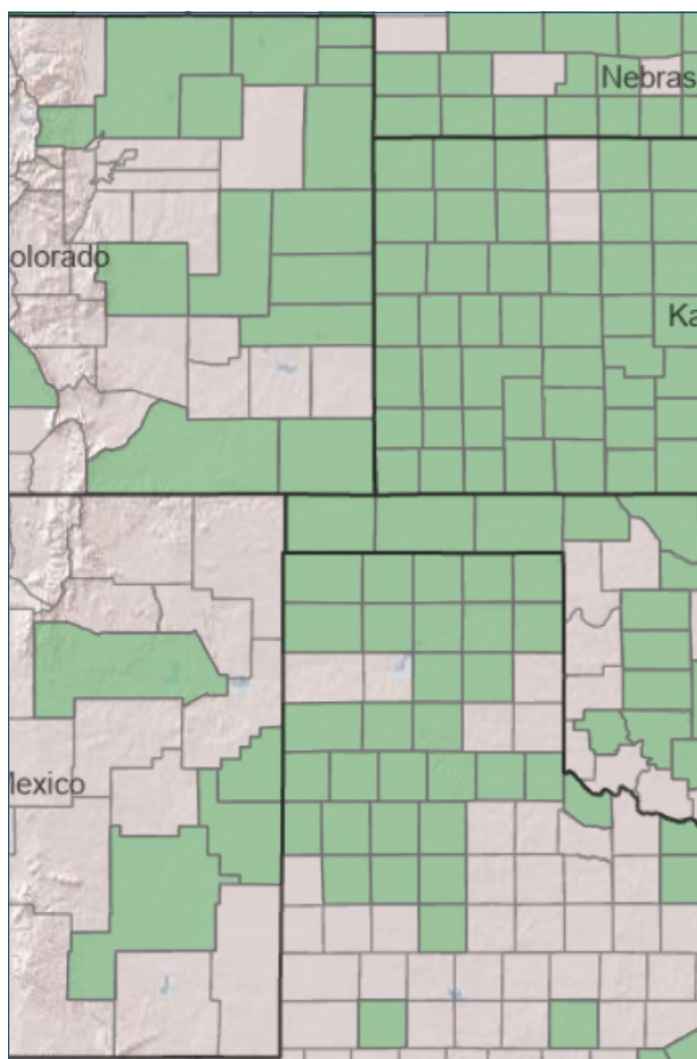
Pollinator Value: The nectar of this plant is attractive to bees, butterflies, and beneficial insects. It is also a larval host plant to a variety of moths and butterflies.

Habitat: Wetland shallows, mudflats, ditches, disturbed wet areas.

Note: Many different types of smartweeds occur in the Southern Great Plains; native, non-native, and some are invasive. All of them have a characteristic papery sheath growing up the stem from a leaf joint. Some of the species can be differentiated by the hairs, bristles, cilia, or lack of anything attached to the top of that sheath.



Photo: Robin R. Buckallew





Seeds



Leaf, stem, and close-up of flower

Perfumeballs (*Gaillardia suavis*)

Aster Family

Other Common Names: Perfumeballs, pincushion daisy, fragrant Gaillardia, rayless Gaillardia

Scientific Name: *Gaillardia suavis*

Plant Symbol: GASU

Distinguishing characteristics: Slender, upright, forms dense stands. Leaves are all basal. Fragrant, solitary flowers are terminal on leafless stalks. Ray florets are usually absent, but if present, are few, yellow to orange or red, very short. Reddish-brown disc flowers are numerous, forming a rounded, pincushion-like head.

Plant Height: 1–2.5 feet

Blooms/Fruits: March–June

Duration: Perennial, herbaceous

Pollinator Value: This species is of high value to native bees, beetles, wasps, flies and butterflies including the monarch.

Habitat: Grows on a wide variety of soils from sandy, clay loam to medium loam soils of plains, prairie, meadows, pastures, and partially shaded areas.

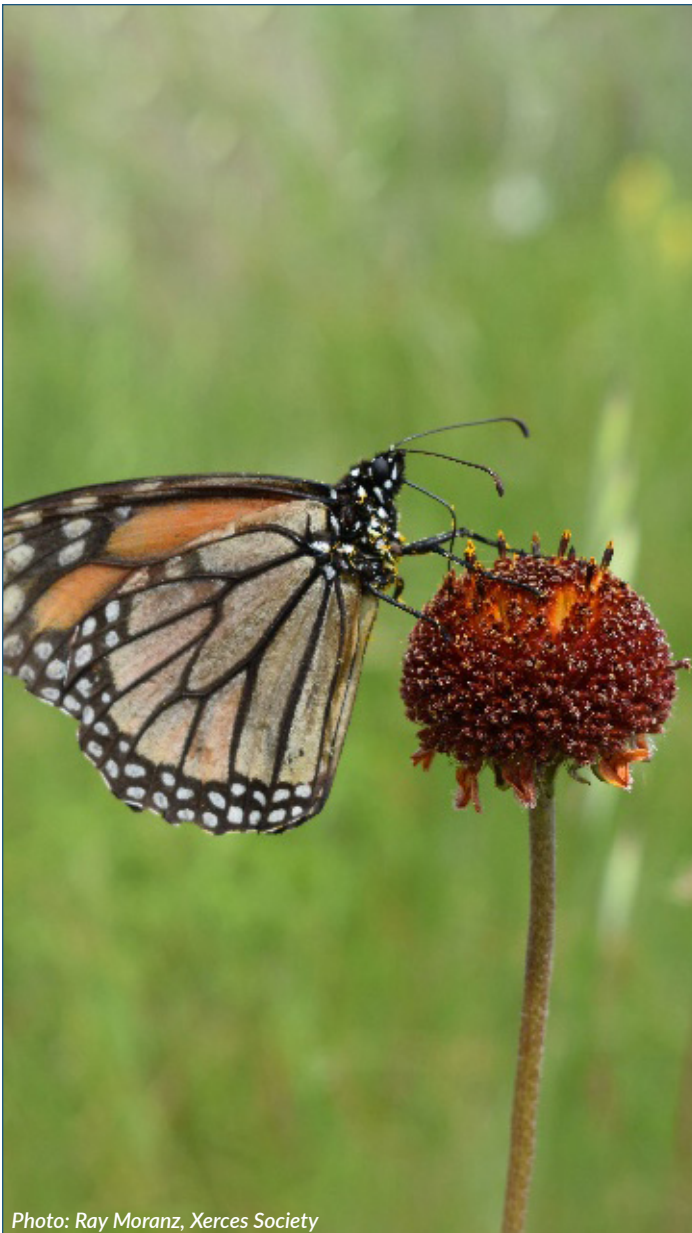


Photo: Ray Moranz, Xerces Society

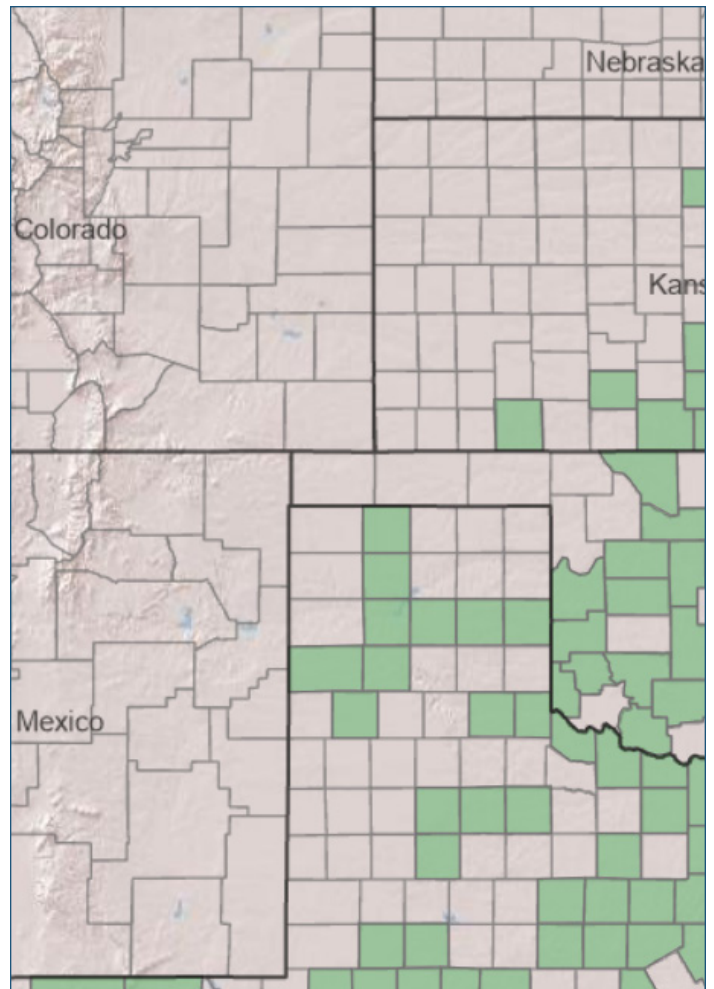




Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seedling



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Basal rosette



Photo: Andy and Sally Wasowski, Lady Bird Johnson Wildflower Center

Full flowering



Photo: Ray Moranz, Xerces Society

Close-up of disc flowers



Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Close-up of disc flowers

Prairie groundsel (*Packera plattensis*)

Aster Family

Other Common Names: Prairie ragwort

Scientific Name: *Packera plattensis* (Nutt.) W.A. Weber & Á. Löve

Plant Symbol: PAPL12

Distinguishing characteristics: Flowers form in a cluster, usually flat across the top. Stalks stout and covered in woolly or cobwebby hairs. Flowers approximately 0.75 inches across, yellow centers and 8 to 12 rays (petals). Bracts narrow, green, and hairy at the base. Early growth basal leaves are small and oval on a slender stalk with rounded or sharply toothed edges and usually purple on the stalk and underside. Mature basal leaves about 3 inches long and 0.05 inch wide. Stems covered in white, cobwebby hairs.

Plant Height: 2 feet

Blooms/Fruits: April–June

Duration: Biannual, herbaceous

Pollinator Value: This species is of high value to native bees, honeybees, butterflies, beetles, wasps, and flies.

Habitat: Dry prairies, roadsides.



Photo: Peter M. Dziuk

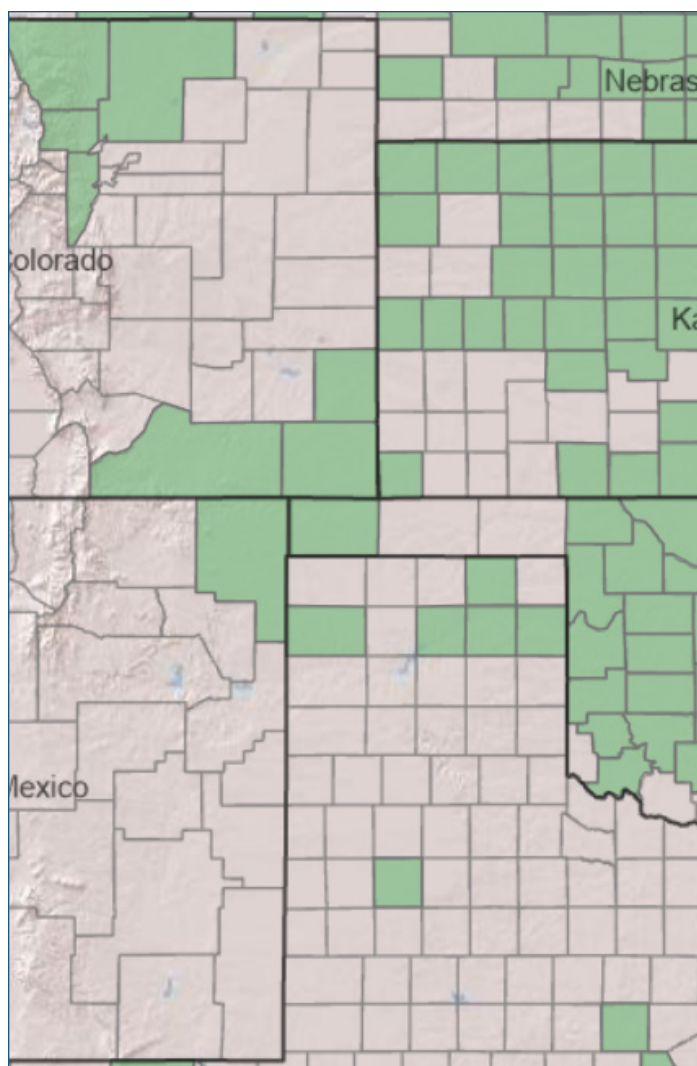




Photo: Peter M. Dziuk

Close-up of stems and flowers



Photo: Peter M. Dziuk

Close-up of stems and flowers



Photo: Peter M. Dziuk

Close-up of late leaf development



Photo: Peter M. Dziuk

Close-up of early leaf development

Prairie sunflower (*Helianthus petiolaris*)

Aster Family

Other Common Names: plains sunflower

Scientific Name: *Helianthus petiolaris* Nutt.

Plant Symbol: HEPE

Distinguishing characteristics: Flower is 1½ to 3 inches across, 10 to 25 yellow rays (petals) and a dark brown center disk ½ to 1 inch in diameter. One to several flowers per plant. Stem 2- to 6-inch-long. Bracts flat, wide at the base and tapering to sharply pointed tips, with short bristly hairs. Leave rough textured with wavy edges, dull green to bluish green; elongated, spear-shaped up to 6 inches long and 1 inch wide. Triangular leaves are up to 3½ inches long and 2 inches wide. Leaf stalks are 0.75 to 1.5 inches long.

Plant Height: 3–6 feet

Blooms/Fruits: June–November

Duration: Annual, herbaceous

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies. It is a butterfly host plant and a moth host plant.

Habitat: Sandy or gravelly roadsides, prairies, idle cropland range and pastures.



Photo: David K. Northington, Lady Bird Johnson Wildflower Center

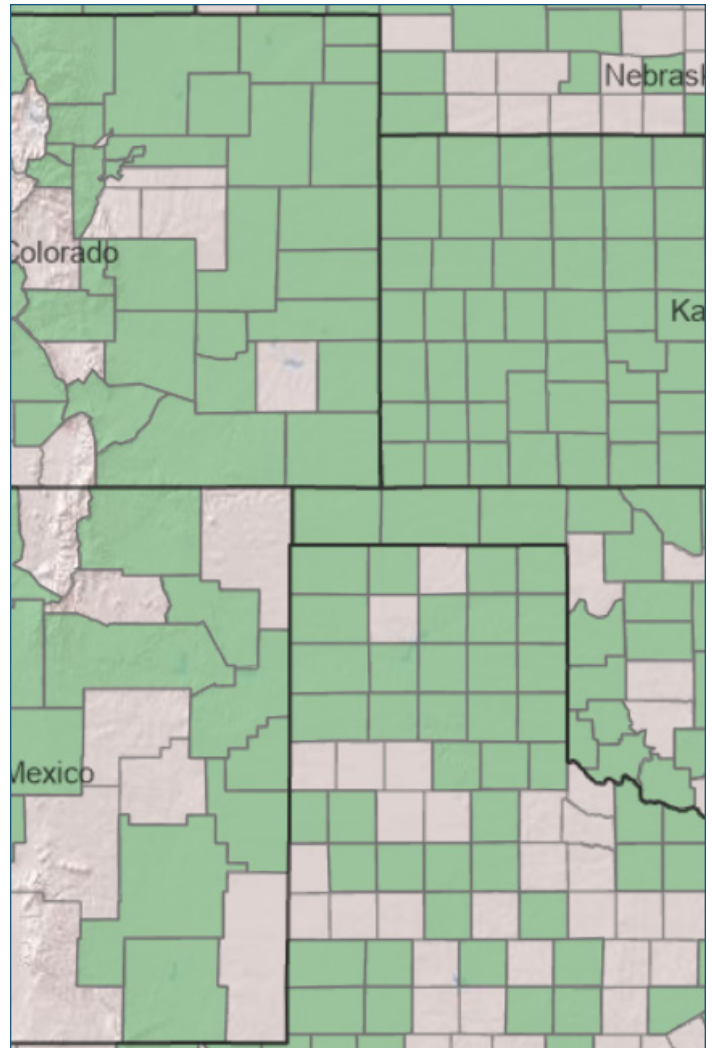




Photo: Katy Chayka

Full flowering



Photo: Katy Chayka

Close-up of leaf

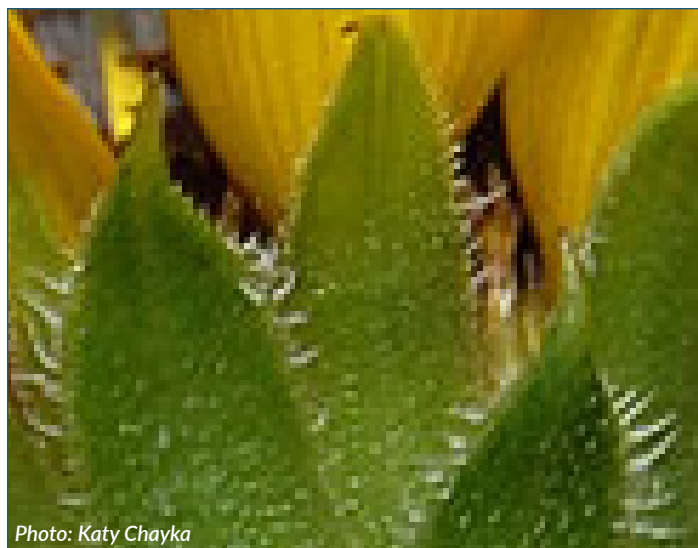


Photo: Katy Chayka

Close-up of spear-shaped leaf



Photo: Katy Chayka

Close-up flowers and bracts



Photo: Katy Chayka

Leaf arrangement on the stem

Purple Prairie Clover (*Dalea purpurea*)

Pea Family

Other Common Names: red tassel flower, thimbleweed, violet prairie clover, wanahcha

Scientific Name: *Dalea purpurea* Vent. **Plant Symbol:** DAPU5

Distinguishing characteristics: Flowering heads are on a compact, thimble-shaped, with a conical axis; flowers appear as a purple ring around the inflorescence and flower at the bottom first and the flower ring moves up the axis as the season progresses; mature flower heads are gray to brown and papery; leaves are alternate, compound, with about 5 leaflets per leaf.

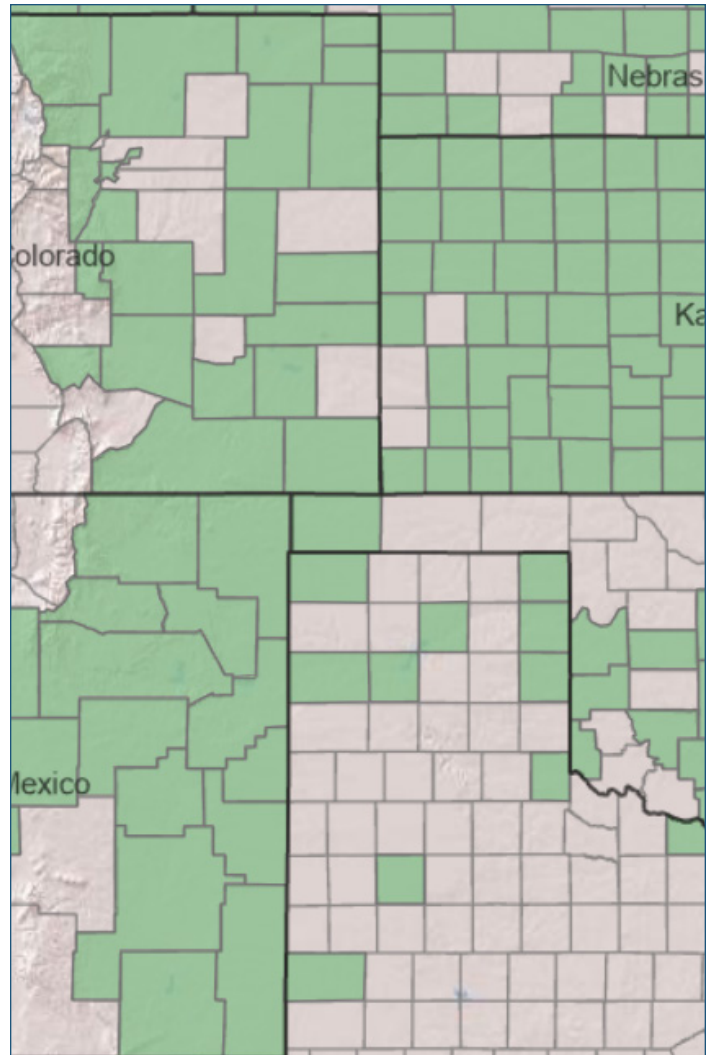
Plant Height: 2–3 feet **Blooms/Fruits:** August–November **Duration:** Perennial **Growth Habit:** Forb/herb; subshrub

Pollinator Value: Purple prairie clover is an especially preferred pollen & nectar source for many bee species of diverse sizes, from sweat bees to bumble bees.

Habitat: Prairies, rocky open glades, along railroad tracks, and rocky or open woods.



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center



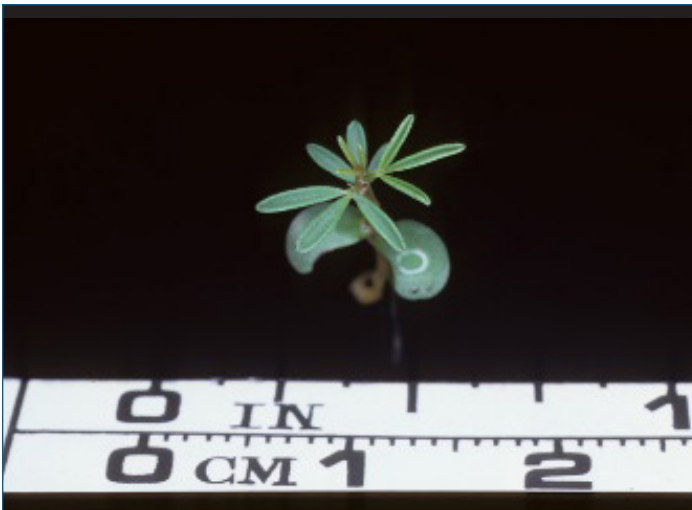


Photo: Lady Bird Johnson Wildflower Center Staff

Seedling



Photo: Lady Bird Johnson Wildflower Center Staff

Seedling



© K. R. Robertson
Illinois Natural
History Survey

Mature



Photo: USDA-NRCS

Leaf



Photo: R.W. Smith Lady Bird Johnson Wildflower Center

Flowering



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Close-up of flower

Red dome blanketflower (*Gaillardia pinnatifida*)

Aster Family

Other Common Names: yellow gaillardia, blanket flower

Scientific Name: *Gaillardia pinnatifida* Torr.

Plant Symbol: GAPI

Distinguishing characteristics: One to 6 flowers at the top of the plant with 2 or 3 clustered at the stem. Flowers 2 to 3 inches across with 10 to 21 ray flowers (petals) and yellow center disk flowers. Leaves 2 to 8 inches long and to 1½ inches wide, narrowly lance to egg-shaped, toothless to shallowly toothed, pointed to blunt at the tip, wedge-shaped to somewhat rounded at the base. Upper leaf surface is hairless or with a few short hairs. Stems are erect, hairless to sparsely short-hairy, green to yellowish or sometimes purplish. Plants have short rhizomes and tuberous roots.

Plant Height: 1–1.5 feet

Blooms/Fruits: June–October

Duration: Perennial, herbaceous

Pollinator Value: This species is of high value to native bees and butterflies.

Habitat: Well drained soils of plains and mesas.



Photo: Sally and Wasowski Lady Bird Johnson Wildflower Center

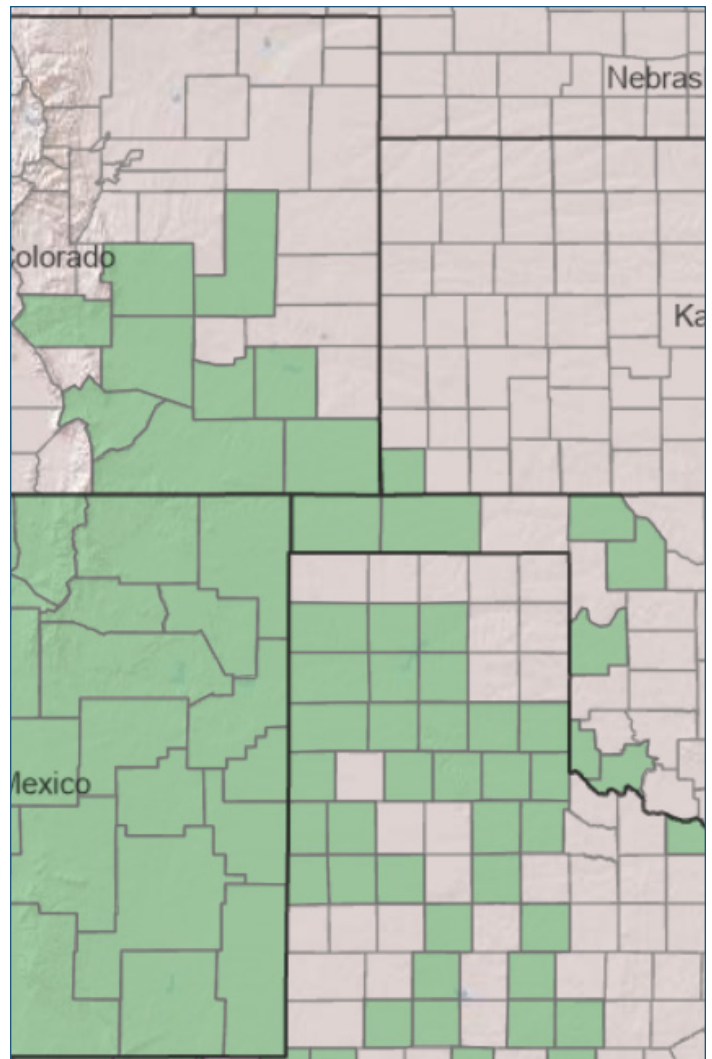




Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Close-up of plant and flowers



Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Close-up of flower underside



Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Basal leaves



Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Close-up of flower



Photo: Wynn Anderson, Lady Bird Johnson Wildflower Center

Close-up of leaf and stem

Roundhead Prairie clover (*Dalea multiflora*)

Pea Family

Other Common Names: round headed dalea, white prairie clover

Scientific Name: *Dalea multiflora* (Nutt.) Shinnery

Plant Symbol: DAMU

Distinguishing characteristics: Flowers in globe-like tight clusters of small flowers terminating the stems, white to yellowish white; leaves alternate on the stem, compound with 7–13 leaflets per leaf.

Plant Height: 1–3 feet, multiple stems

Blooms/Fruits: June–July, as late as October

Duration: Perennial, herbaceous

Growth Habit: Forb/herb; subshrub

Pollinator Value: This plant provides nectar and pollen to a variety of bee species.

Habitat: Prairies, limestone and calcareous clays, meadows, and open woodlands.



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

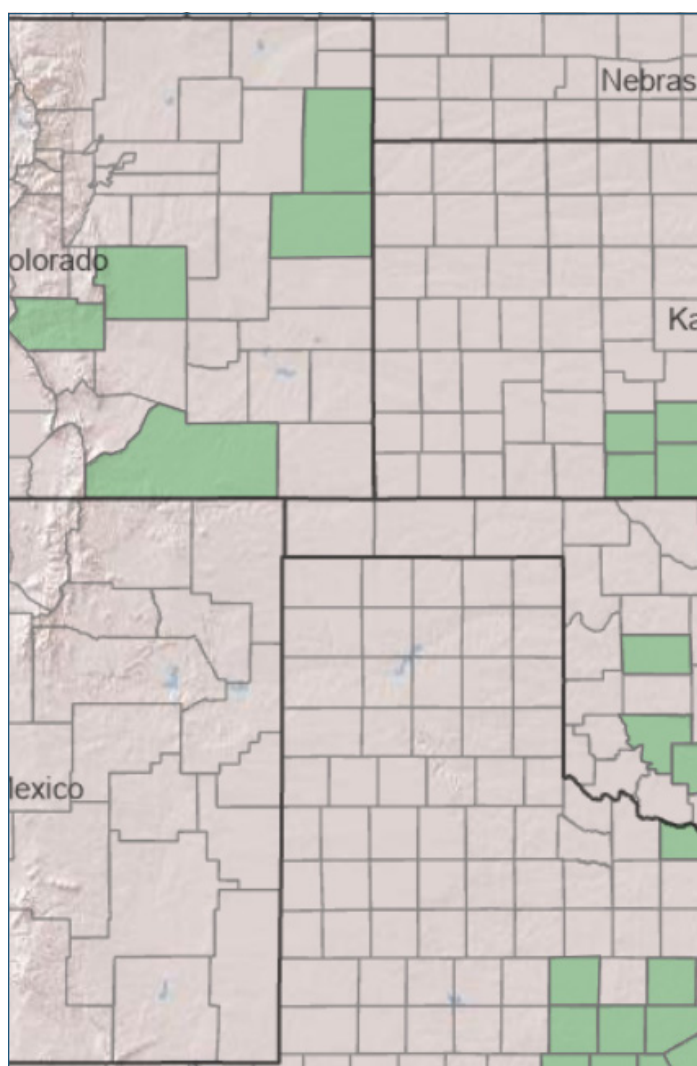




Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Close-up of flowers



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Mature flowers



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Leaf and stem

Rubber rabbitbrush (*Ericameria nauseosa*)

Aster Family

Other Common Names: none

Scientific Name: *Helianthus nuttallii* Torr. & A. Gray

Plant Symbol: HENU

Distinguishing characteristics: Erect, semi-woody perennial shrub with thin, flexible branching stems; leaves and stems are greenish-gray or greenish-white due to densely matted hairs. Leaves are 0.75 to 2.75 inches long, 0.02 to 0.12 inches wide, alternate, linear to spatula shaped and have a rubber-like odor. Yellow flowers are in dense clusters at the end of the stems; individual flowers are about 0.25–0.5-inch diameter, tubular; 4–6 yellow disk flowers per head. Bracts below the heads are in multiple rows, lanceolate with raised midrib.

Plant Height: 2–6 feet

Blooms/Fruits: August–November

Duration: Perennial shrub

Pollinator Value: This species is of very high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies.

Habitat: Open dry places or open woodland.



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

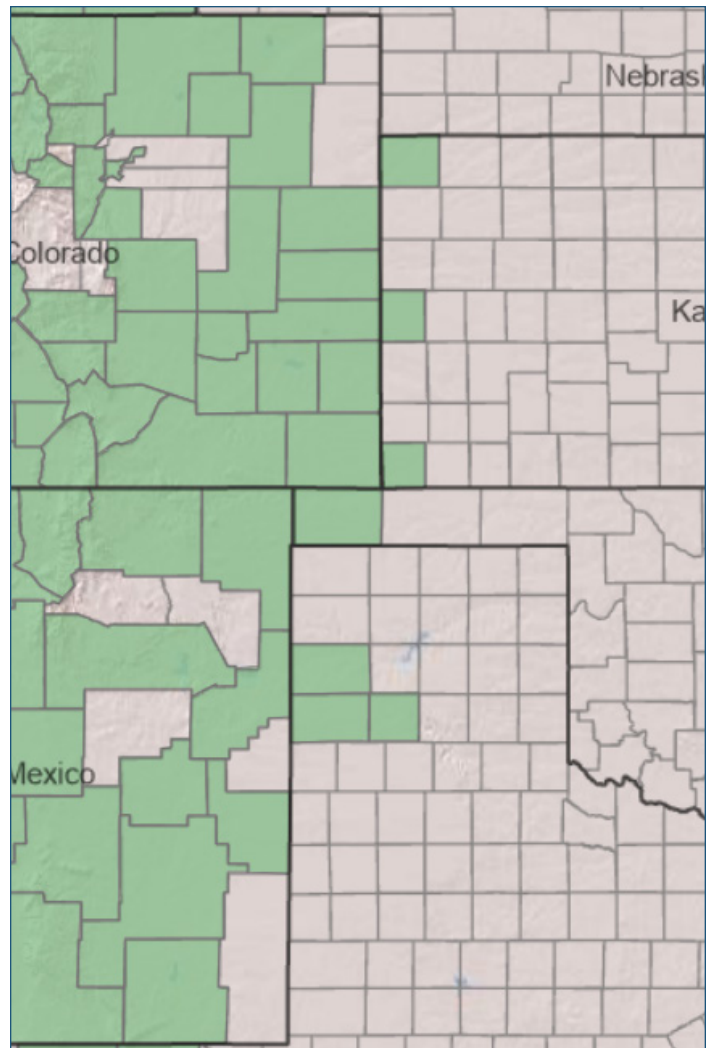




Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Full bloom



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Close-up of tubular-shaped flowers



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Rubber rabbitbush late vegetative stage



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Close-up of leaf and stem

Sand Milkweed (*Asclepias arenaria*)

Milkweed Family

Other Common Names: western sand milkweed

Scientific Name: *Asclepias arenaria* Torr.

Plant Symbol: ASAR

Distinguishing characteristics: One to 6 flowers at the top of the plant with 2 or 3 clustered at the stem. Flowers 2 to 3 inches across with 10 to 21 ray flowers (petals) and yellow center disk flowers. Leaves 2 to 8 inches long and to 1½ inches wide, narrowly lance to egg-shaped, toothless to shallowly toothed, pointed to blunt at the tip, wedge-shaped to somewhat rounded at the base. Upper leaf surface is hairless or with a few short hairs. Stems are erect, hairless to sparsely short-hairy, green to yellowish or sometimes purplish. Plants have short rhizomes and tuberous roots.

Plant Height: 2–4 feet

Blooms/Fruits: June–September

Duration: Perennial, herbaceous

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies.

Habitat: Sandy soils, grazed pastures, and prairies, mowed or hayed areas, mowed roadsides.



Photo: Brenda K. Loveless, Lady Bird Johnson Wildflower Center

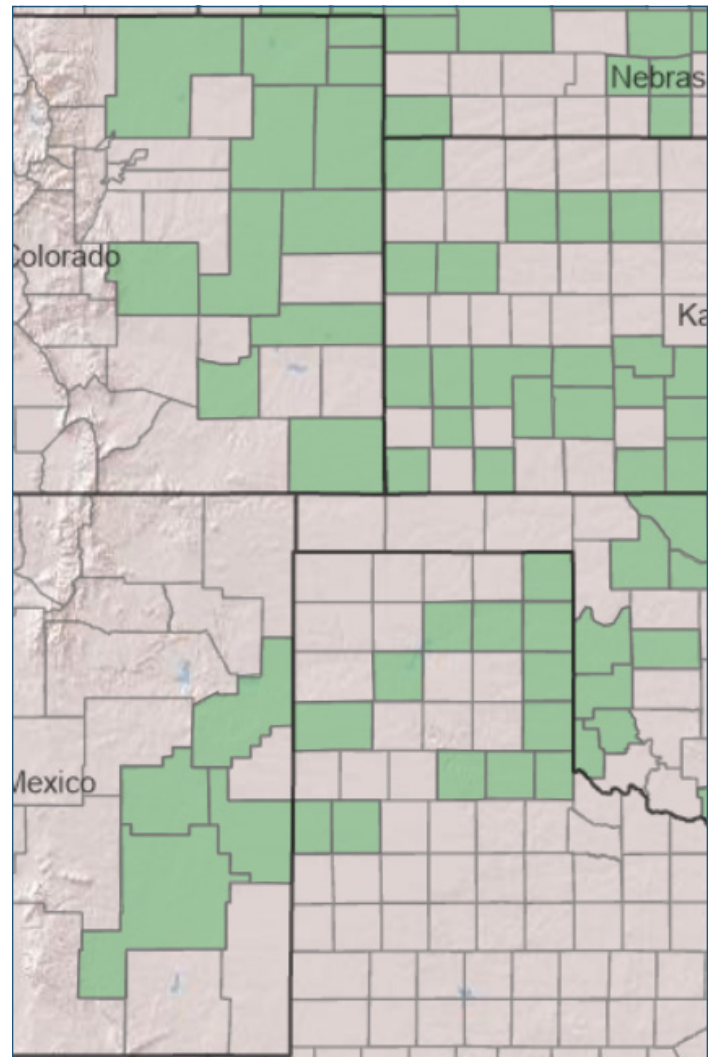




Photo: Brenda K. Loveless, Lady Bird Johnson Wildflower Center

Flower clusters



Photo: Norman G. Flaigg, Lady Bird Johnson Wildflower Center

Flower clusters



Photo: Norman G. Flaigg, Lady Bird Johnson Wildflower Center

Foliage/leaf arrangement



Photo: Norman G. Flaigg, Lady Bird Johnson Wildflower Center

Foliage/leaf arrangement

Sawtooth Sunflower (*Helianthus grosseserratus*)

Aster Family

Other Common Names: hélíanthe à grosses dents **Scientific Name:** *Helianthus grosseserratus* M. Marten **Plant Symbol:** HEGR

Distinguishing characteristics: One to 6 flowers at the top of the plant with 2 or 3 clustered at the stem. Flowers 2 to 3 inches across with 10 to 21 ray flowers (petals) and yellow center disk flowers. Leaves 2 to 8 inches long and to 1½ inches wide, narrowly lance to egg-shaped, toothless to shallowly toothed, pointed to blunt at the tip, wedge-shaped to somewhat rounded at the base. Upper leaf surface is hairless or with a few short hairs. Stems are erect, hairless to sparsely short-hairy, green to yellowish or sometimes purplish. Plants have short rhizomes and tuberous roots.

Plant Height: 3–12 feet

Blooms/Fruits: August–November

Duration: Perennial, herbaceous

Pollinator Value: These flowers are known to attract butterflies and other pollinators. They provide both pollen and nectar to foraging bees.

Habitat: Dry to wet prairies, open sites, wooded stream bottoms.



Photo: Katy Chayka

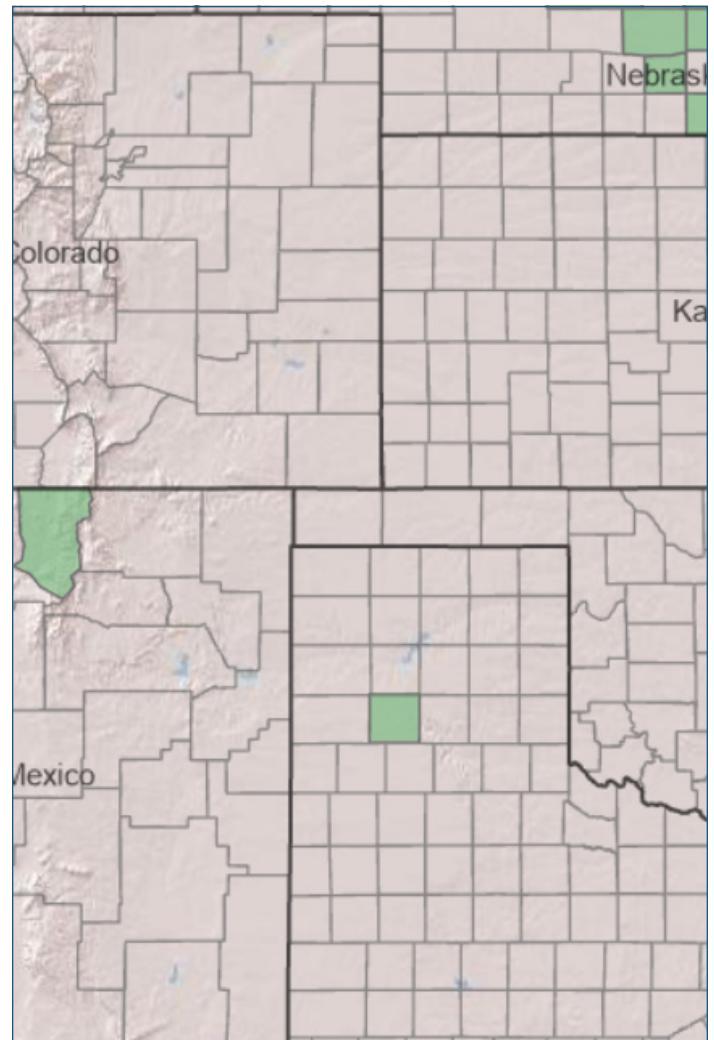




Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close-up of flowers



Photo: Katy Chayka

Close-up of flower clusters



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Leaf arrangement



Photo: Katy Chayka

Stem and close-up of leaf

Showy Milkweed (*Asclepias speciosa*)

Milkweed Family

Other Common Names: none

Scientific Name: *Asclepias speciosa* Torr.

Plant Symbol: ASSP

Distinguishing characteristics: Flowers in umbrella-shaped clusters borne on hairy flower stalks; petals reflexed with upturned tips, greenish-purple to pink with an overall hour-glass shape; leaves are opposite on the stem, pointed at the tip, rounded at the base, and hairy on the under surface; stems are hairy and may be branched.

Plant Height: 1.5–3 feet; but may reach 6 ft., erect **Blooms/Fruits:** May–September **Duration:** Perennial, herbaceous

Pollinator Value: Larval host plant for the monarch butterfly. Flowers attract butterflies. High value summer nectar source.

Habitat: Wet prairies, savannahs, and roadside ditches.



Photo: John Hix, Lady Bird Johnson Wildflower Center

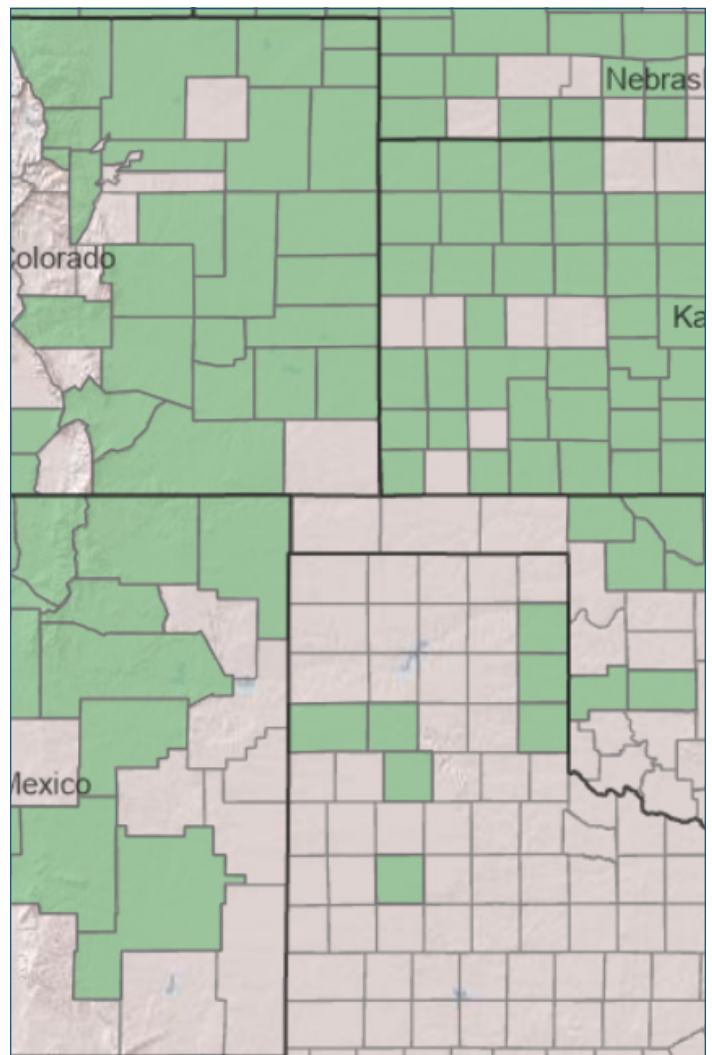




Photo: John Hix, Lady Bird Johnson Wildflower Center

Close-up of blooms



Photo: Fran Cox, Lady Bird Johnson Wildflower Center

Mature fruit with seed



Photo: Brooke Byerley Lady Bird Johnson Wildflower Center

Stem and leaf arrangement



Photo: Bennie Bengston, Lady Bird Johnson Wildflower Center

Fruit

Slimleaf Milkweed (*Asclepias stenophylla*)

Milkweed Family

Other Common Names: narrowleaf milkweed, narrowleaf green milkweed

Scientific Name: *Asclepias stenophylla* A. Gray

Plant Symbol: ASST

Distinguishing characteristics: Stems erect, usually solitary from a corm-like rootstock; leaves alternately arranged on the stem, sessile or with very short leaf stalks, linear in shape, 4–7 in. long by $< \frac{1}{4}$ in. wide; inflorescences several from the upper leaf axils, globular in shape with numerous flowers in each; flowers with reflexed petals, mostly green, pale-green, to light-yellow; crown light-green to white with the corona hoods appearing 3-lobed.

Plant Height: 1–3 feet **Blooms/Fruits:** May–August **Duration:** Perennial, herbaceous, (from thick, tuberous rootstock)

Pollinator Value: Visited by bumble bees, other native bees, honey bees, and a variety of butterflies.

Habitat: Upland prairies, open ground, exposed ledges, bluffs, calcareous ground, roadsides, and pastures.

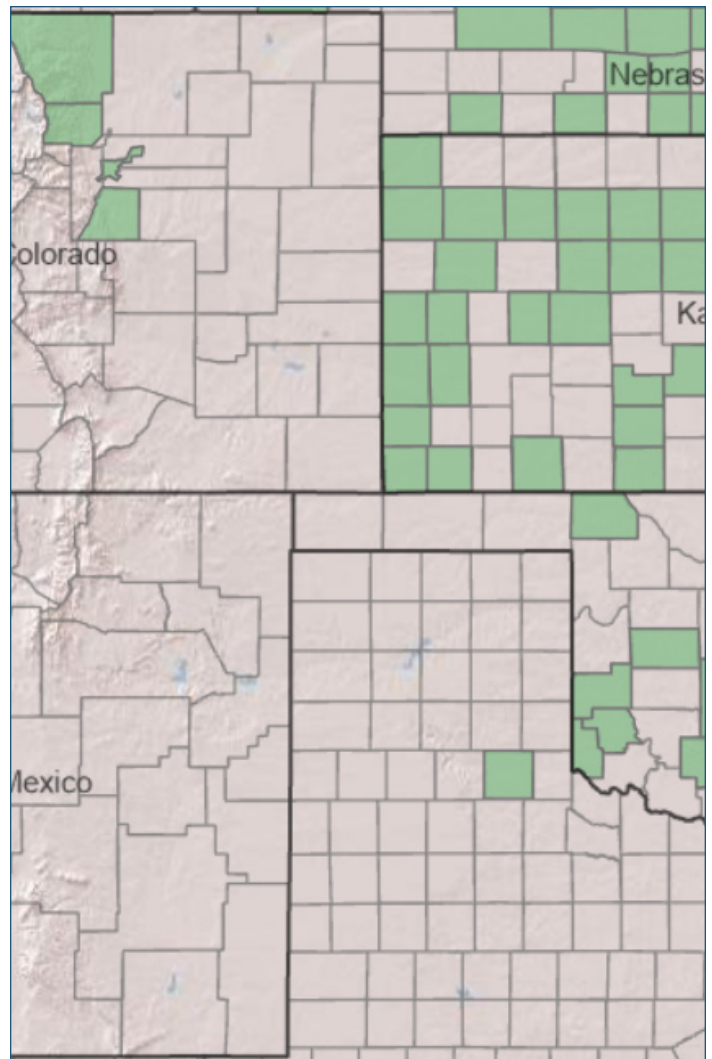




Photo: Mike Haddock

Flowering/close-up view of flower



Photo: Mike Haddock

Close-up of flower cluster



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Close-up of flower



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Leaf shape and arrangement

Smooth Blue Aster (*Symphyotrichum laeve*)

Aster Family

Other Common Names: smooth aster

Scientific Name: *Symphyotrichum laeve* (L.) Á. Löve & D. Löve

Plant Symbol: SYLA3

Distinguishing characteristics: Flowering heads few to many on the ends of ascending branches, rays are blue to lavender and the center is yellow; leaves are widest near the middle and sometimes heart-shaped, generally without hairs; leaf stems absent or very short; basal leaves and those on the lower half of the stem generally absent/withered at flowering.

Plant Height: 2–4 feet; erect, branched above the stem's midpoint

Blooms/Fruits: August–October

Duration: Perennial, herbaceous; (from creeping, woody rhizomes)

Pollinator Value: These flowers provide abundant nectar and pollen in the fall. They attract butterflies. Several aster-oligolege bees feed on the pollen.

Habitat: Open or drying sites, upland prairies, open forests, and roadsides.



Photo: Katy Chayka

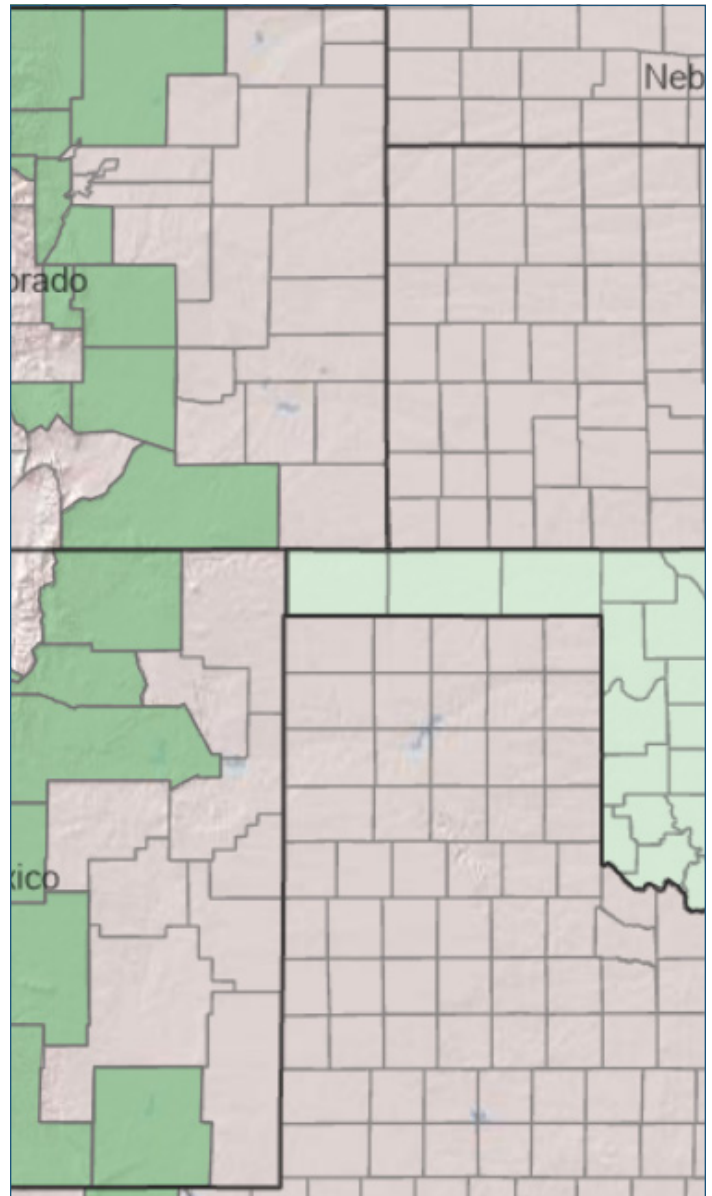




Photo: Katy Chayka

Full flowering/close-up of flowers



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flowers



Photo: John Hilty, Illinois Wildflower

Stem and leaf arrangement



Photo: Katy Chayka

Full flowering/close-up of flowers



Photo: Katy Chayka

Stem and leaf arrangement



Photo: Katy Chayka

Mature plant

Smooth Oxeye (*Heliopsis helianthoides*)

Aster Family

Other Common Names: oxeye sunflower, false sunflower

Plant Symbol: HEHE5

Scientific Name: *Heliopsis helianthoides* (L.) Sweet

Distinguishing characteristics: Flower heads with persistent yellow rays and a cone-shaped yellow-orange center and superficially appearing like a small version of common sunflower; leaves are opposite on the stem, have a rough texture to the touch, with coarsely saw-toothed margins, 3 main veins, and a pointed tip.

Plant Height: 3–5 feet **Blooms/Fruits:** June–September **Duration:** Perennial, herbaceous (from creeping rhizomes)

Pollinator Value: This species is of high value to bumblebees, other native bees, honeybees, butterflies, beetles, wasps, and flies.

Habitat: Dry areas, prairies, edges of woods, roadsides, open woods, edges of fields and thickets.



Photo: K.R. Robertson, Illinois Natural History Survey

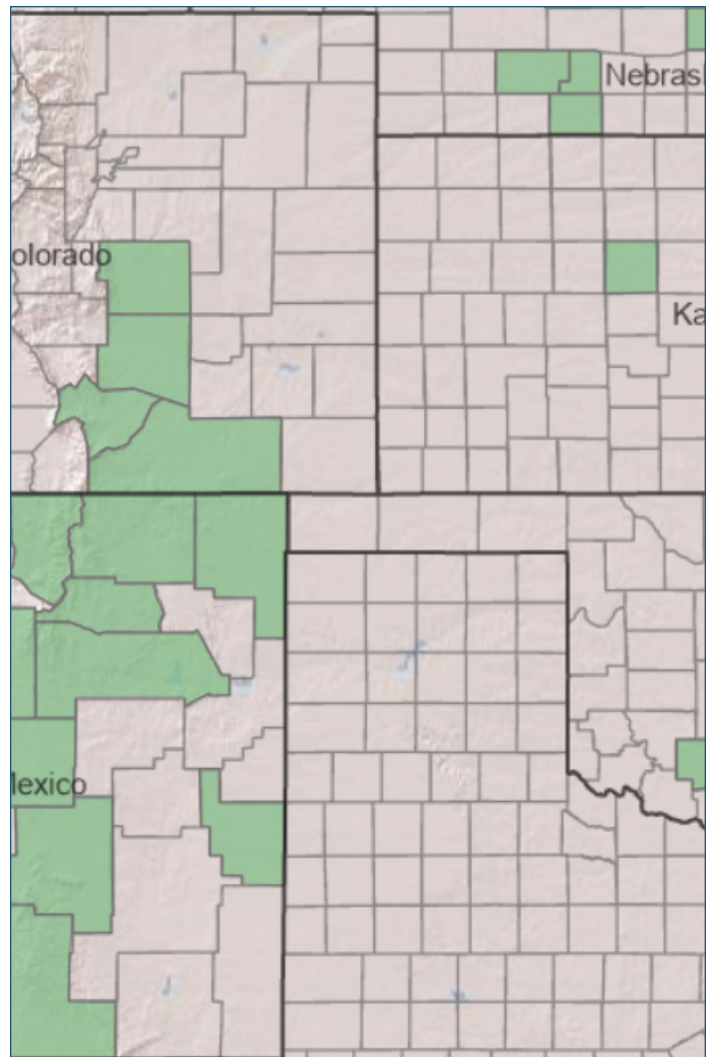




Photo: K.R. Robertson, Illinois Natural History Survey

Full flowering



Julie Makin, Lady Bird Johnson Wildflower Center

Close-up of bloom underside



Photo: John Hilty, Illinois Wildflowers

Close-up of blooms



Photo: John Hilty, Illinois Wildflowers

Stem arrangement



Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Mature plant



Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Mature plant

Sneezeweed (*Helenium amarum*)

Aster Family

Other Common Names: bitter sneezeweed, yellow dog fennel

Scientific Name: *Helenium amarum* (Raf.) H. Rock

Plant Symbol: HEAM

Distinguishing characteristics: Flower heads bright yellow with a conical, darker yellow to occasionally purple center, ray petals with 3 distinct terminal lobes; stems not winged; leaves finely divided into thread-like segments resembling dog fennel.

Plant Height: 1–3 feet

Blooms/Fruits: April–June; until October

Duration: Annual

Growth Habitat: Forb/herb

Pollinator Value: This species is a valuable late-season floral resource for bees and butterflies. However, honey produced from these flowers is unpalatable.

Habitat: Open fields, overgrazed pasture, and disturbed areas.



Photo: Andy and Sally Wasowski, Lady Bird Johnson Wildflower Center

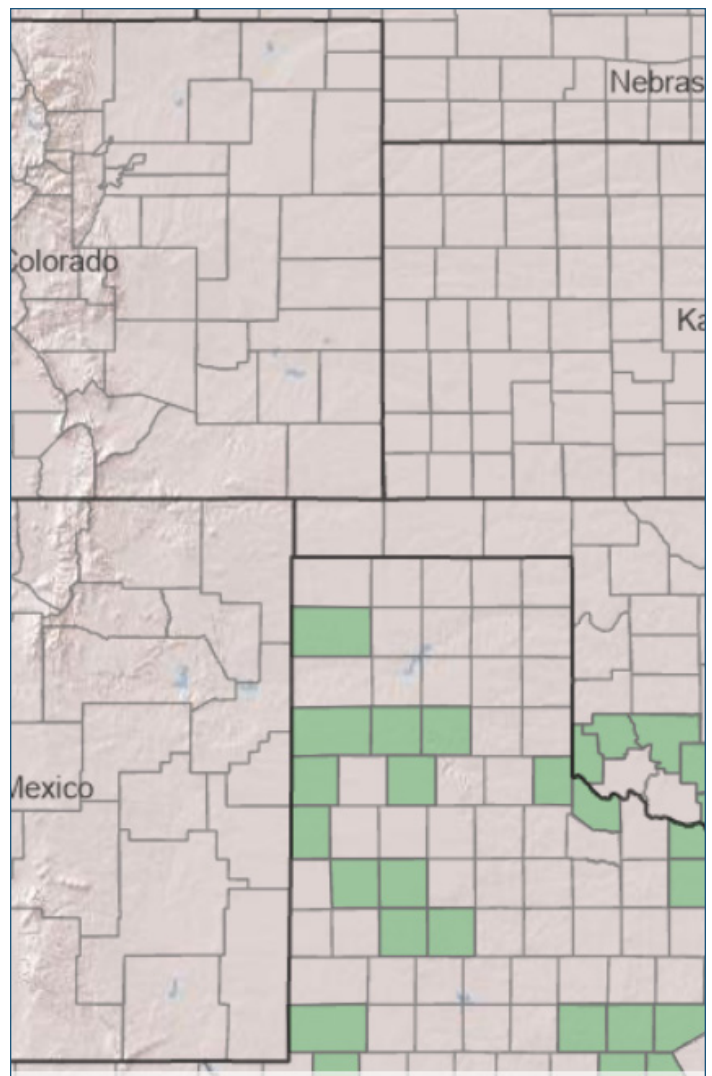




Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center

Flowering



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Early seed maturity

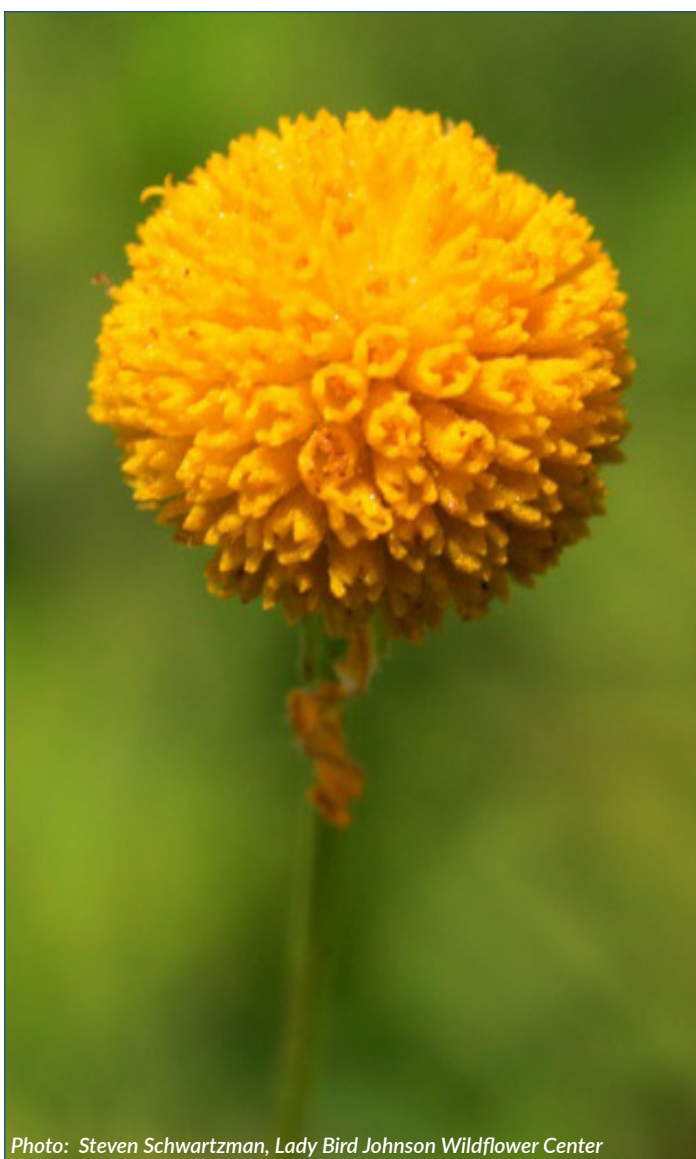


Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Flower head after rays have fallen



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Close-up of flowers (note: 3 lobes on ray petals)



Photo: Texas A&M

Very narrow leaves (note: thread-like leaf segments)

Soft-hair Marbleseed (*Onosmodium bejariense*)

Borage Family

Other Common Names: soft-hair false gromwell, false gromwell, western marbleseed

Scientific Name: *Onosmodium bejariense* DC. ex A. DC.

Plant Symbol: ONBE

Distinguishing characteristics: Flowers tubular shaped and small (0.5 in.) on long, coiled inflorescences, white, cream, or yellowish-green in color; inflorescences are coiled like a fern frond or scorpion's tail and unroll as the flowers develop; leaves are alternate, lance to egg shaped, with a tapering tip and very hairy on the top and undersurfaces; basal leaves usually falling off at flowering time.

Plant Height: 1–3 feet

Blooms/Fruits: May–August

Duration: Perennial, herbaceous (may have a woody base)

Pollinator Value: Softhair marbleseed's enclosed flowers are primarily accessed by large native bees. They contain both pollen and nectar resources.

Habitat: Grasslands, forest openings, limestone outcrops.



Photo: W.D. and Dolfia Branford, Lady Bird Johnson Wildflower Center

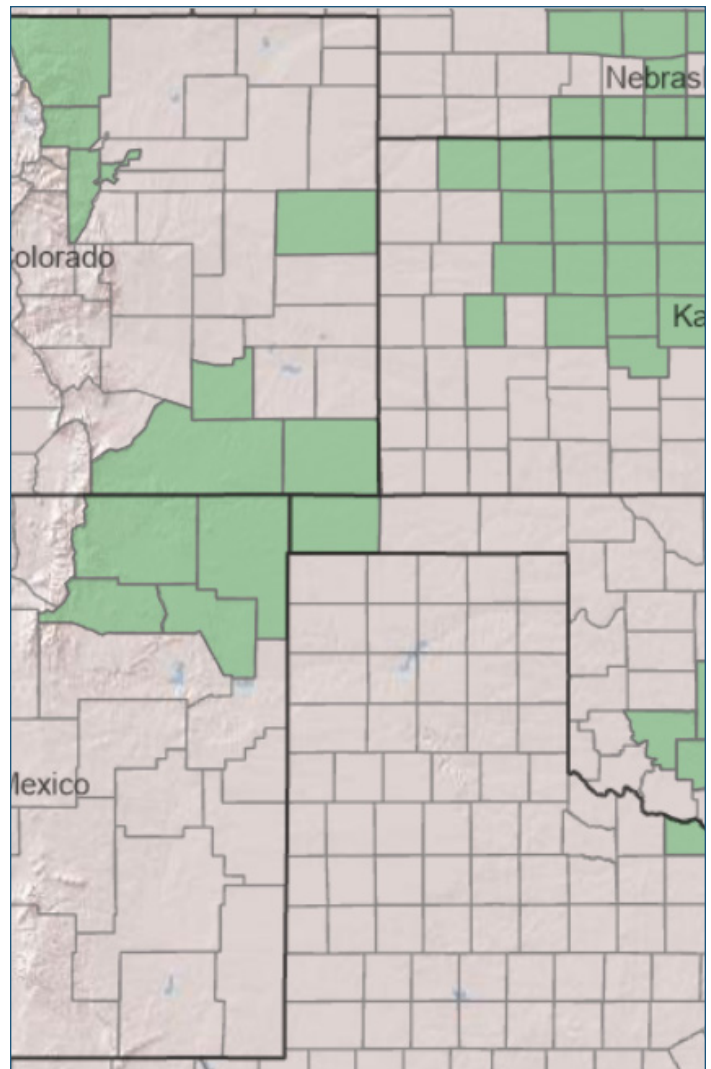




Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Flowers with stem and leaf arrangement



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Close-up of flowers



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement



Photo: Corey Raimond

Seed



Photo: Corey Raimond

Seeding

Spanish Gold (*Grindelia papposa*)

Aster Family

Other Common Names: goldenweed, sawleaf daisy **Scientific Name:** *Grindelia papposa* G.L. Nesom & Suh **Plant Symbol:** GRPA8

Distinguishing characteristics: Flower heads with yellow rays and a yellow center, floral bracts spreading, cup-shaped, with pointed projections; leaves elliptical or widest at the top and with leaf margins toothed with a bristle or soft spine on each tooth. Sticky stems and leaves.

Plant Height: 2–5 feet **Blooms/Fruits:** August–September **Duration:** Annual, Biennial **Growth Habit:** Forb/herb

Pollinator Value: This flower is of special value to native bees and other insects. Its pollen and nectar have been documented to feed a variety of beetles.

Habitat: Disturbed areas, prairies, roadsides.



Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center

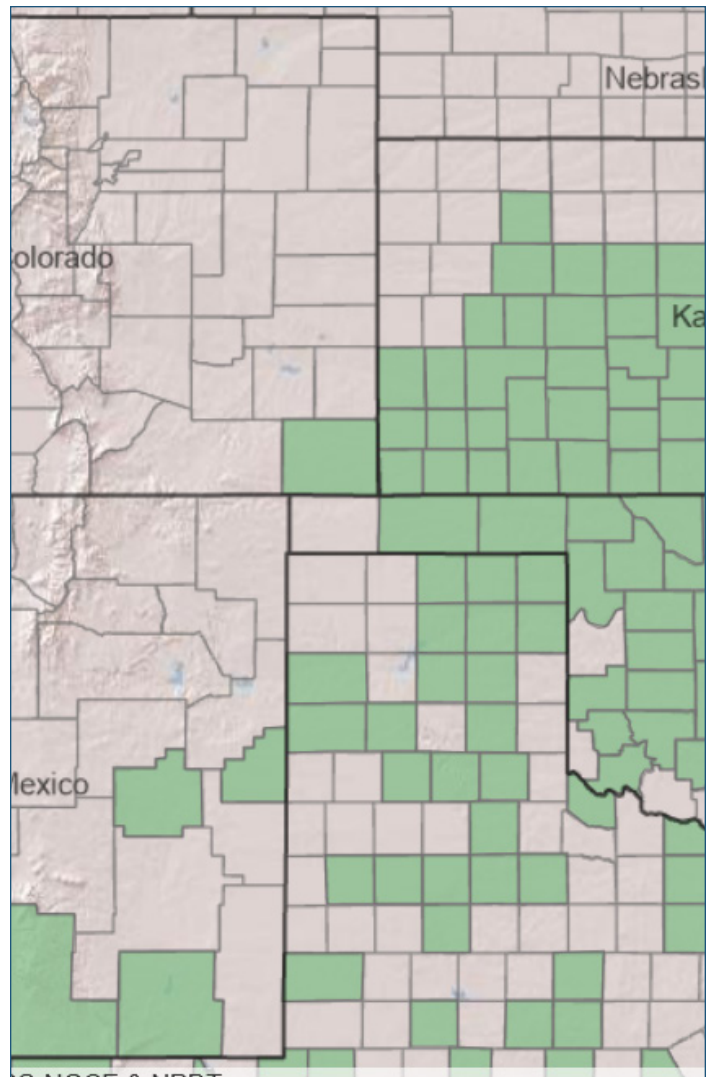




Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center

Close-up of flower and buds



Photo: W. D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

Stem and leaf

Spotted Beebalm (*Monarda punctata*)

Mint Family

Other Common Names: dotted beebalm, horse mint, dotted horse mint

Scientific Name: *Monarda punctata* L.

Plant Symbol: MOPU

Distinguishing characteristics: The inflorescences are in a series of ball-like clusters of flowers terminating the stems; flowers two-lipped with a hood (top) and lip (bottom), cream-colored to pale yellow or pinkish with prominent purplish-brown to maroon spots; leaves are lance shaped and moderately hairy on both the top and bottom surfaces; the stems are square like most mints.

Plant Height: 1–2 feet **Blooms/Fruits:** June–September
herbaceous

Duration: Perennial (South), to Biennial, to Annual (North),

Pollinator Value: Hummingbirds may be attracted by the nectar. Also popular with butterflies and long-tongued bees.

Habitat: Sand prairies, crop field margins, open disturbed sites, and along roadsides.



Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

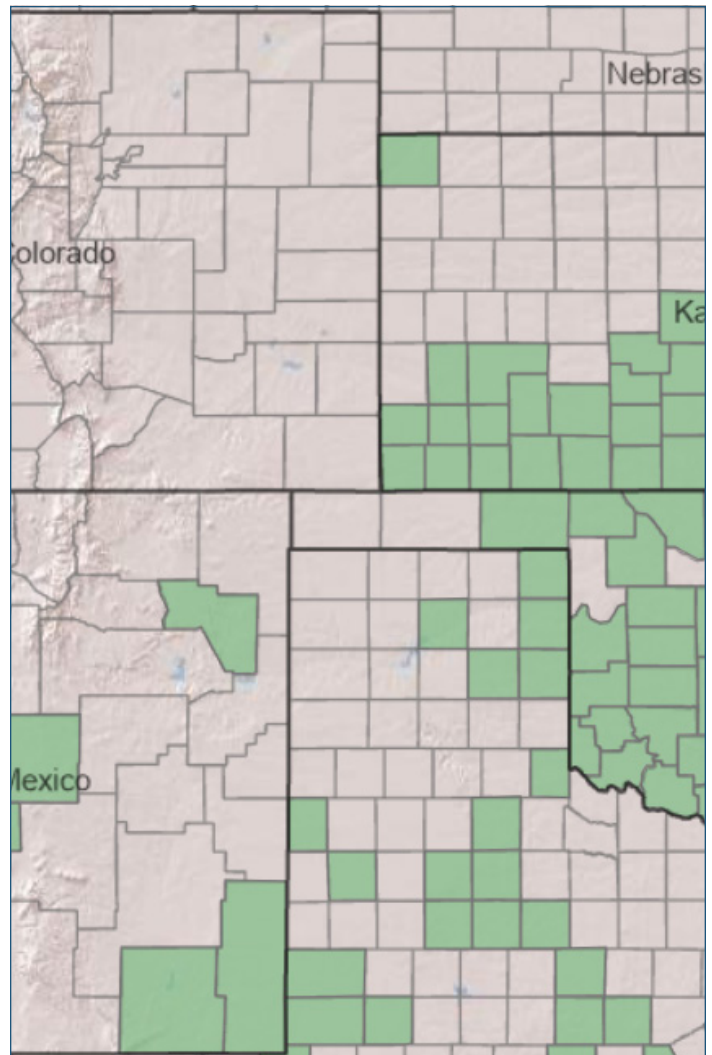




Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close-up of blooms



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center

Close-up of blooms



Photo: Kimberly Kline, Lady Bird Johnson Wildflower Center

Full flowering



Photo: W.D. and Dolfia Bransford, Lady Bird Wildflower Center

Stem and leaf arrangement



Photo: John Hilty, Illinois Wildflowers

Close-up of leaf

Stiff Goldenrod (*Oligoneuron rigidum*)

Aster Family

Other Common Names: ridged goldenrod **Scientific Name:** *Oligoneuron rigidum* (L) Small

Plant Symbol: OLRI

Distinguishing characteristics: Flower heads in branched, flat-topped to mildly rounded inflorescences, individual flower heads small with yellow rays and yellow centers; leaves with basal rosettes that are persistent at flowering as well as smaller stem leaves; leaf surfaces with short, usually dense, curved hairs making the surface feel rough; stems with several fine grooves/ridges and with pubescence of curved hairs.

Plant Height: 2–4 feet

Blooms/Fruits: July–November

Duration: Perennial, herbaceous (with short, creeping rhizomes)

Pollinator Value: Flower supports pollinators and beneficial insects. It attracts butterflies including the monarch.

Habitat: Bottomland and upland prairies, dry upland forests, old fields, and pastures.

Note: There are many plants commonly called goldenrods that belong to different plant genera, *Solidago*, *Euthamia*, and *Oligoneuron*, and they are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.



Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

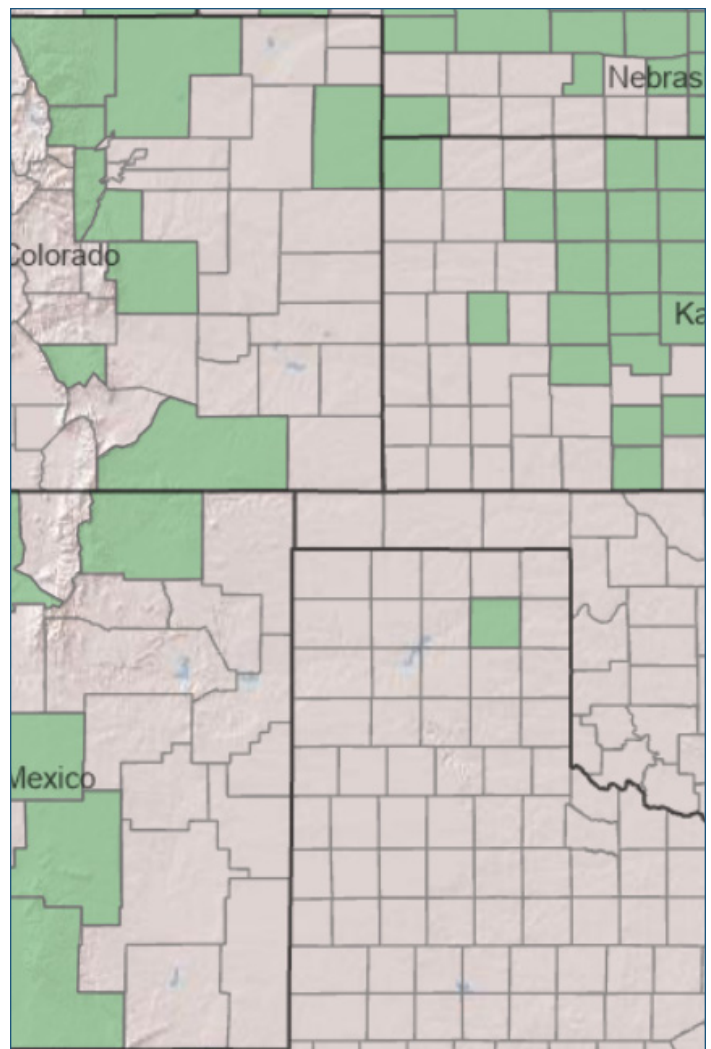




Photo: K.R. Robertson, Illinois Natural History Survey

Close-up of blooms



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement



Photo: K.R. Robertson, Illinois Natural History Survey

Full flowering



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement

Stiff Sunflower (*Helianthus pauciflorus*)

Aster Family

Other Common Names: prairie sunflower, few-leaved sunflower

Scientific Name: *Helianthus pauciflorus* Nutt.

Plant Symbol: HEPA19

Distinguishing characteristics: Flower heads single or a few and terminal, rays yellow and the central disc reddish-brown to dark purple; leaves few and are mostly towards the base of the plant, thick-textured and somewhat leathery, covered with short stiff hairs making the surfaces feel rough/raspy, and with 3- main veins.

Plant Height: 4–6 feet
dense colonies from rhizomes)

Blooms/Fruits: August–October

Duration: Perennial, herbaceous (forms

Pollinator Value: This plant is a great summer nectar source. Sunflowers are work—horse plants, supporting bees, butterflies, and other beneficial insects. Many species of native bee specialize on pollen from this plant genus. Checkerspot butterflies feed on its leaves as caterpillars.

Habitat: Upland prairies, loess hill prairies, openings in dry upland forests, pastures, and roadsides.



Photo: Mike Haddock

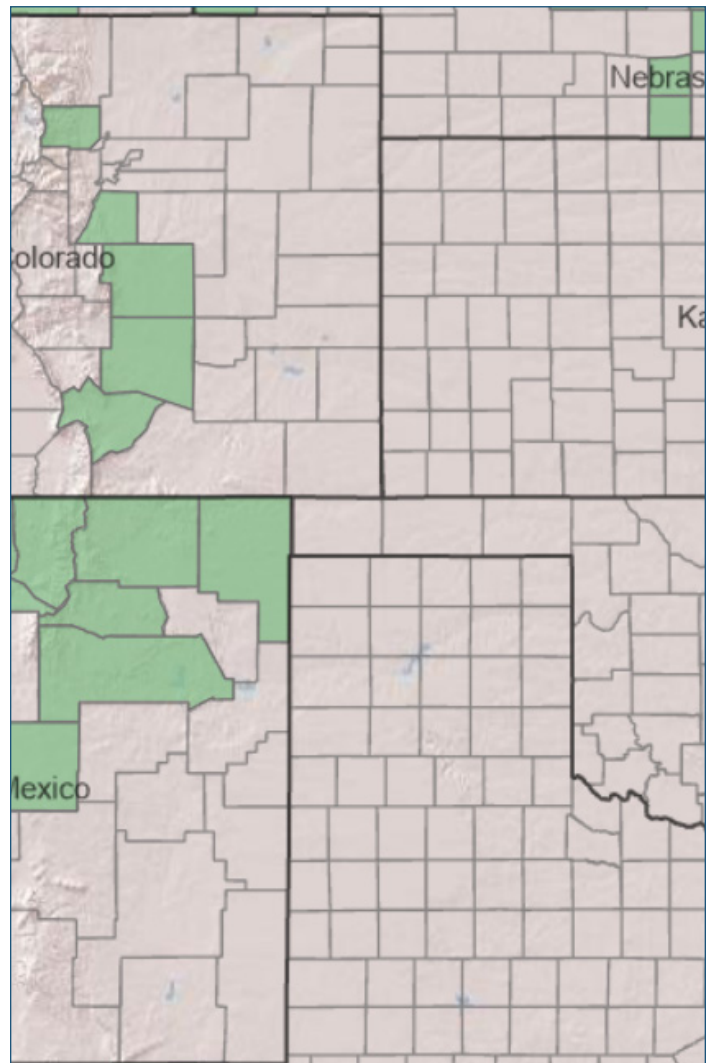




Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close-up of bloom



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close-up of bloom underside



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Full flowering



Photo: Mike Haddock

Stem and leaf arrangement



Photo: Mike Haddock

Stem and leaf arrangement



Photo: Mike Haddock

Close-up of leaf

Swamp Milkweed (*Asclepias incarnata*)

Milkweed Family

Other Common Names: rose milkweed, pleurisy root, white Indian hemp **Scientific Name:** *Asclepias incarnata* L.

Plant Symbol: ASIN

Distinguishing characteristics: Inflorescences long stalked and with 2–12 per plant, both terminal and in the leaf axis toward the upper end of the stem; flowers pink to pinkish-white; petals reflexed; leaves opposite on the stem, lance-shaped, and with an abrupt or rounded base; leaf stalk short.

Plant Height: 2–6 feet

Blooms/Fruits: June–October

Duration: Perennial, herbaceous

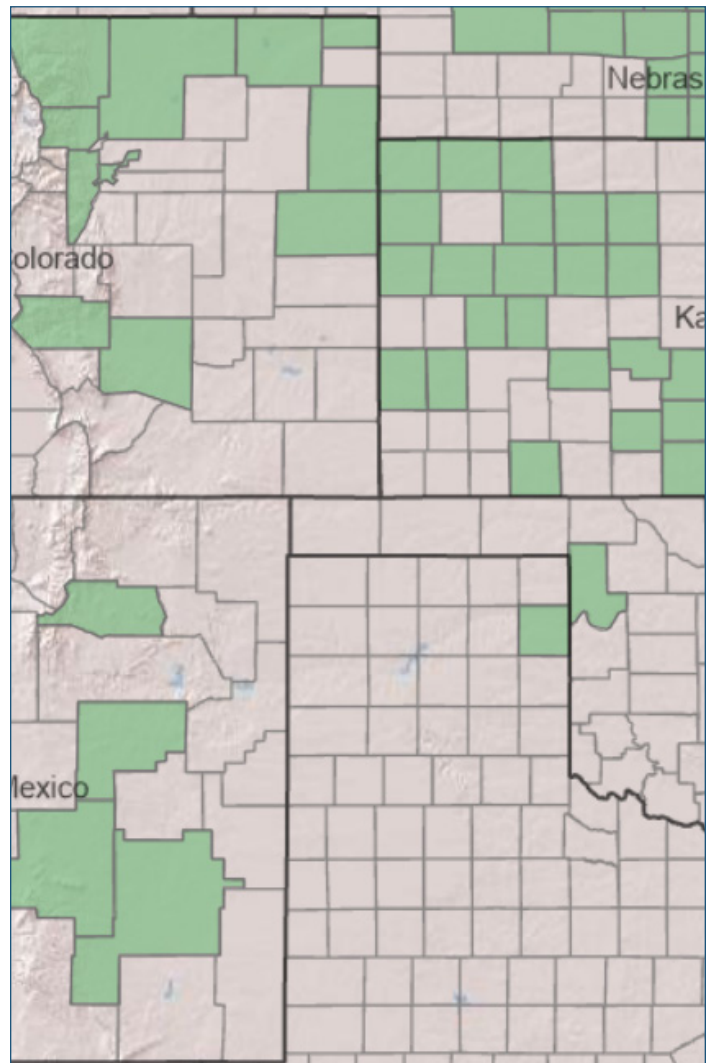
Pollinator Value: Larval host plant for the monarch butterfly. Flowers attract butterflies.

Habitat: Wetland habitats: swamps, sloughs, marshes, and edges of ponds.

Note: Swamp milkweed is poisonous if consumed in larger quantities by people and livestock. Sheep are especially susceptible.



Photo: Jennifer Anderson



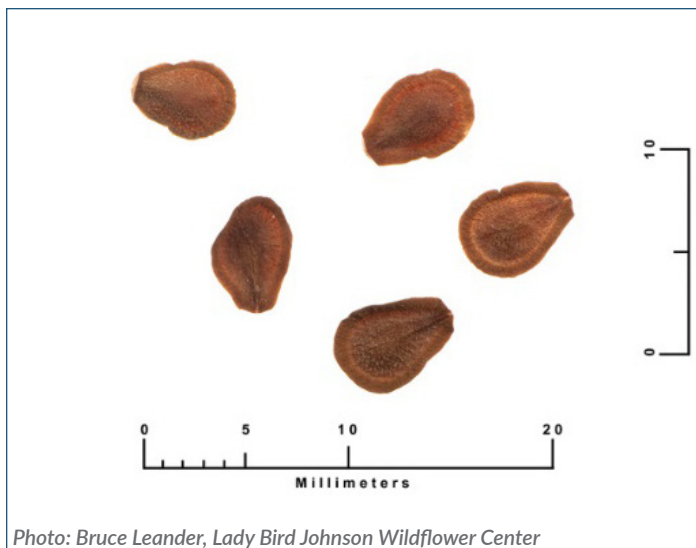


Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seeds



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Leaf arrangement



Photo: Steve Eggers, USACE

Fruit



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Close-up of blooms

Wavyleaf thistle (*Cirsium undulatum*)

Aster Family

Other Common Names: plumed thistle, pasture thistle

Scientific Name: *Cirsium undulatum* (Nutt.) Spreng.

Plant Symbol: CIUN

Distinguishing characteristics: Stems and leaves gray-green, grayish, or whitish due to soft, white hairs on stems and on one or both sides of the leaves. Leaves are 5-8 inches long, often twisted and curled and lobed with spine-tipped lobes and wavy leaf margins. Flowers are white to lavender or pink and up to 2.0 inches long. Base of the flower head is urn-shaped, and bracts on base of flower head are whitish with the midvein tipped with a short tan to brown spine.

Plant Height: 1–3 feet, but can reach 6 feet

Blooms/Fruits: May–October

Duration: Biannual/Perennial, herbaceous

Pollinator Value: This species is of very high value to bumblebees, other native bees, butterflies, beetles, wasps, and flies.

Habitat: Rocky, sandy soils of fields, roadsides, disturbed areas, dry hillside, and plains and shortgrass prairies.

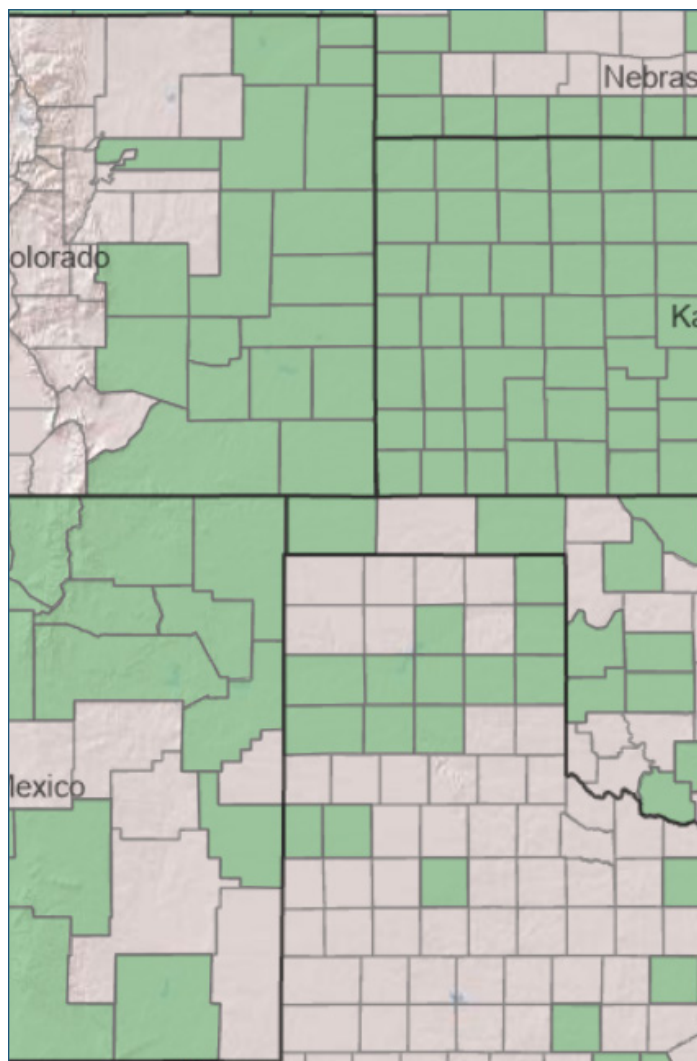


Photo: R.W. Smith, Lady Bird Johnson Wildflower Center



Photo: Missouri State Univ.

Seedling stage



Photo: Jill Larson Wilborn

Close-up of leaf



Photo: Norman. G. Flaigg, Lady Bird Johnson Wildflower Center

Leaf arranged on stem



Photo: Norman. G. Flaigg, Lady Bird Johnson Wildflower Center

Flowering and close-up of flower head in bloom



Photo: W.D. and Döphia Bransford, Lady Bird Johnson Wildflower Center

Flowering and close-up of flower head in bloom

Western Wallflower (*Erysimum asperum*)

Mustard Family

Other Common Names: none

Scientific Name: *Erysimum asperum* Nutt.

Plant Symbol: ERAS2

Distinguishing characteristics: Stems erect, unbranched or with a few branches towards the top; leaves basal and alternate along the stem; basal leaves narrow but widest towards the top and often withering when flowering; stem leaves narrow with widely toothed margins and no leaf stem; inflorescence terminal with numerous bright yellow flowers clustered together, petals 4; fruits are long, slender pods (about 3 inches long × 1/16 inch wide) that are 4-angled and with 4 stripes, fruits are widely spaced on the inflorescence and spreading/divergent.

Plant Height: 1–2 feet

Blooms/Fruits: April–May

Duration: Biennial to Perennial, herbaceous

Pollinator Value: Most *Erysimum* spp. are attractive to a variety of bees, flies, butterflies and moths. This species is known to be visited by *Halictus* and *Hylaeus* bees at the very least. It is also a known host plant of the Sara orangetip butterfly.

Habitat: Limestone outcrops, prairies, and hillsides, sand dunes, roadsides, bluffs, sandhills along stream banks, knolls, and open plains.



Photo: Mike Haddock

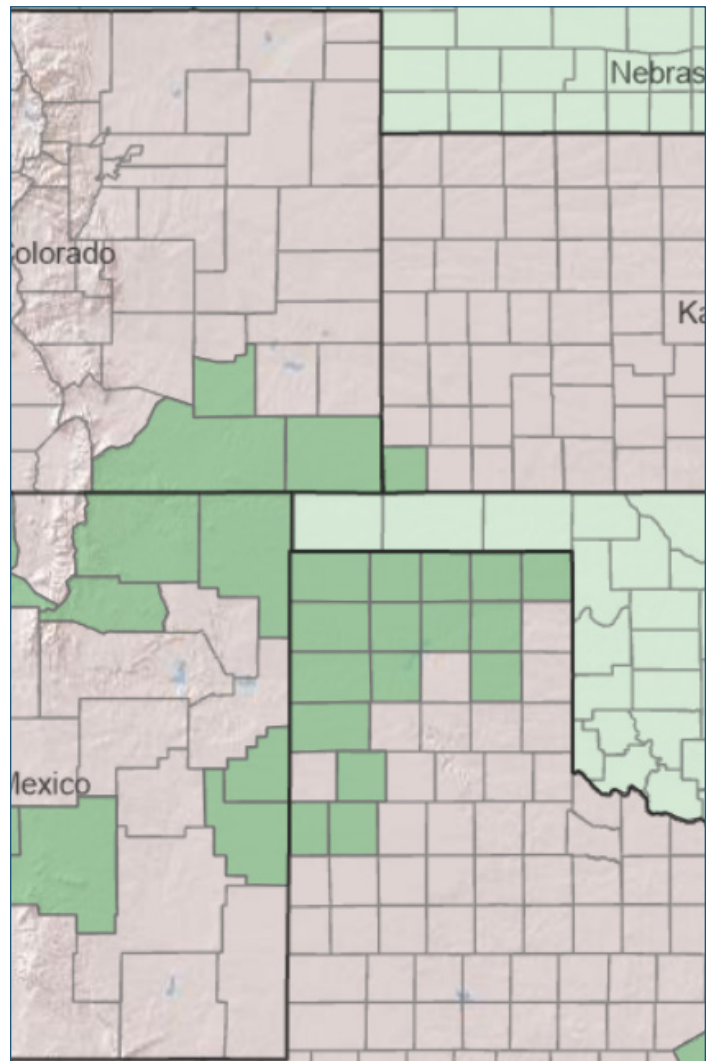




Photo: Mike Haddock

Leaf and stem



Photo: R.W. Smit, Lady Bird Johnson Wildflower Center

Leaf and stem with flowers



Photo: Mike Haddock

Full bloom



Photo: R.W. Smit, Lady Bird Johnson Wildflower Center

Flowering and close-up of flowers



Photo: R.W. Smit, Lady Bird Johnson Wildflower Center

Flowering and close-up of flowers

White Heath Aster (*Symphyotrichum ericoides*)

Aster Family

Other Common Names: heath aster, tall white aster, white aster, white prairie aster

Scientific Name: *Symphyotrichum ericoides* (L.) G.L. Nesom

Common Synonym: *Aster ericoides* L.

Plant Symbol: SYER

Distinguishing characteristics: Numerous small flower heads with white rays and yellowish center; leaves linear and without leaf stalks, most falling off by flowering time; a colonial plant with highly branched underground rhizomes and over-ground runners.

Plant Height: 2–3 feet

Blooms/Fruits: September–November

Duration: Perennial

Growth Habit: Forb/herb

Pollinator Value: This plant is a popular pollen and nectar source with bees, butterflies, and beneficial insects.

Habitat: Open prairies and plains, disturbed areas, very widespread.



Photo: Terry Glase, Lady Bird Johnson Wildflower Center

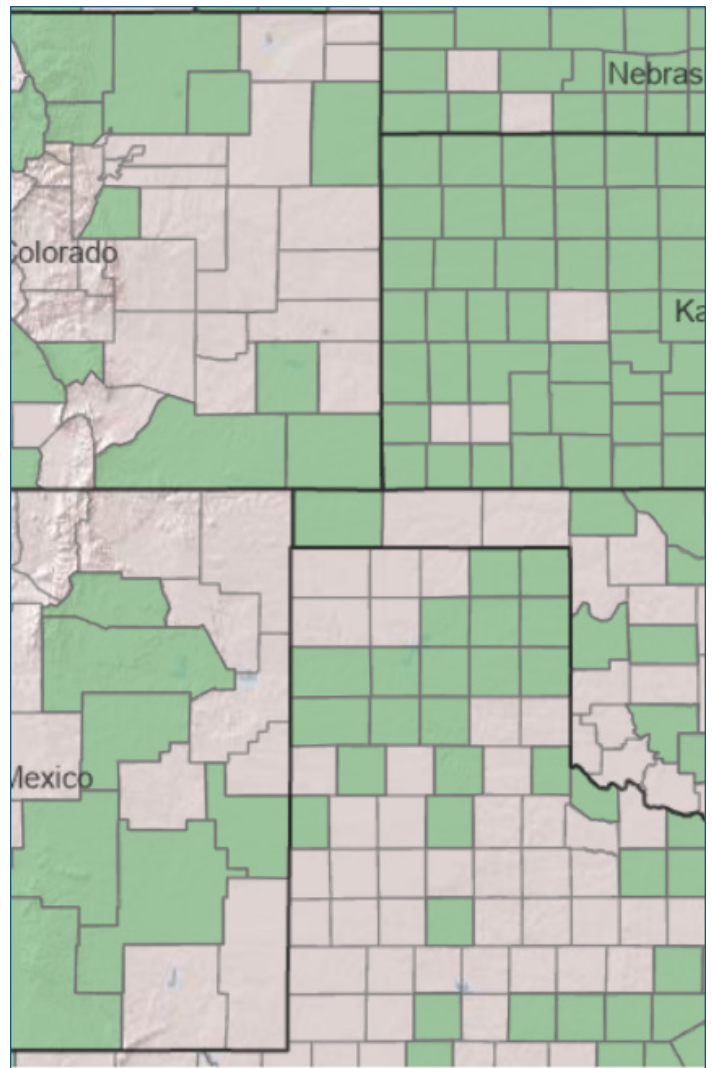




Photo: Theodore Webster, USDA-ARS

Stem and leaf arrangement



Photo: Terry Glase, Lady Bird Johnson Wildflower Center

Close-up of flowers



Photo: Ohio State Web Lab, The Ohio State Univ.

Seedling

White Prairie Clover (*Dalea candida*)

Pea Family

Other Common Names: none

Scientific Name: *Dalea candida* Michx. ex Willd.

Plant Symbol: DACA7

Distinguishing characteristics: Flowers small, two-lipped, white, and in cylindrical or thimble-shaped clusters at the top of the stem; flowering in a ring at the base of the cylindrical inflorescence first and the ring moves up the inflorescence; leaves compound with 3–5 pairs of leaves with one on the top; stems 1 to several from a thick taproot.

Plant Height: 1–2 feet

Blooms/Fruits: May–August

Duration: Perennial, herbaceous (to shrubby bases)

Pollinator Value: This flower provides nectar and pollen to bees and butterflies. It is also a larval host plant for the Dogface butterfly.

Habitat: Prairies, open woodland, stream valleys, and roadsides.



Photo: Katy Chayka

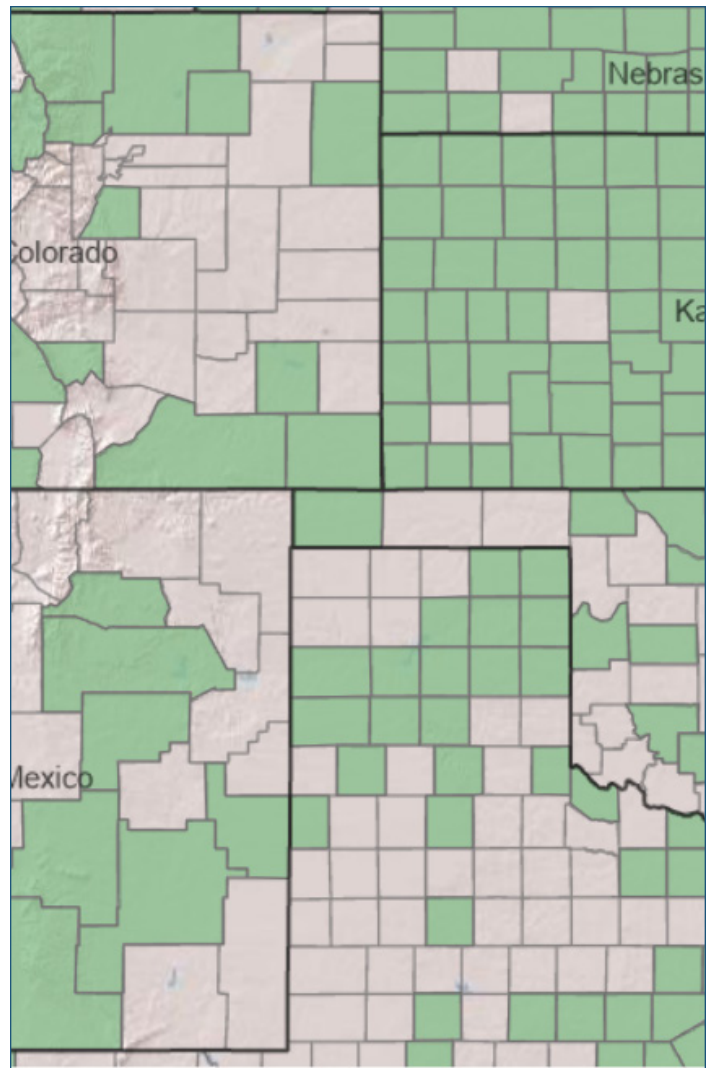




Photo: Katy Chayka

Close-up of flowers



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Close-up of flowers



Photo: Peter M. Dziuk

Stem and leaf arrangement



Photo: Peter M. Dziuk

Stem and leaf arrangement

Wild Bergamot (*Monarda fistulosa*)

Aster Family

Other Common Names: beebalm

Scientific Name: *Monarda fistulosa* L.

Plant Symbol: MOFI

Distinguishing characteristics: Flowers in tight ball-like clusters terminating the branches, strongly 2-lipped with the upper lip erect and the lower lip downturned, pale to dark lavender, but rarely white; leaves opposite, variable from lance-shaped to widely lance-shaped, the undersurface has small, clear spots (punctae) that are visible when holding the leaf up to the light; stems are square and with backwards-pointed hairs on the upper half of the stem.

Plant Height: 1.5–4 feet
creeping rhizomes)

Blooms/Fruits: May–September

Duration: Perennial, herbaceous (with slender,

Pollinator Value: This flower is highly attractive to long-tongued bees and butterflies.

Habitat: Dry open woods, fields, wet meadows and ditches, and at the edges of woods and marshes; calcareous or acidic soils.



Photo: K. R. Robertson, Illinois Natural History Survey

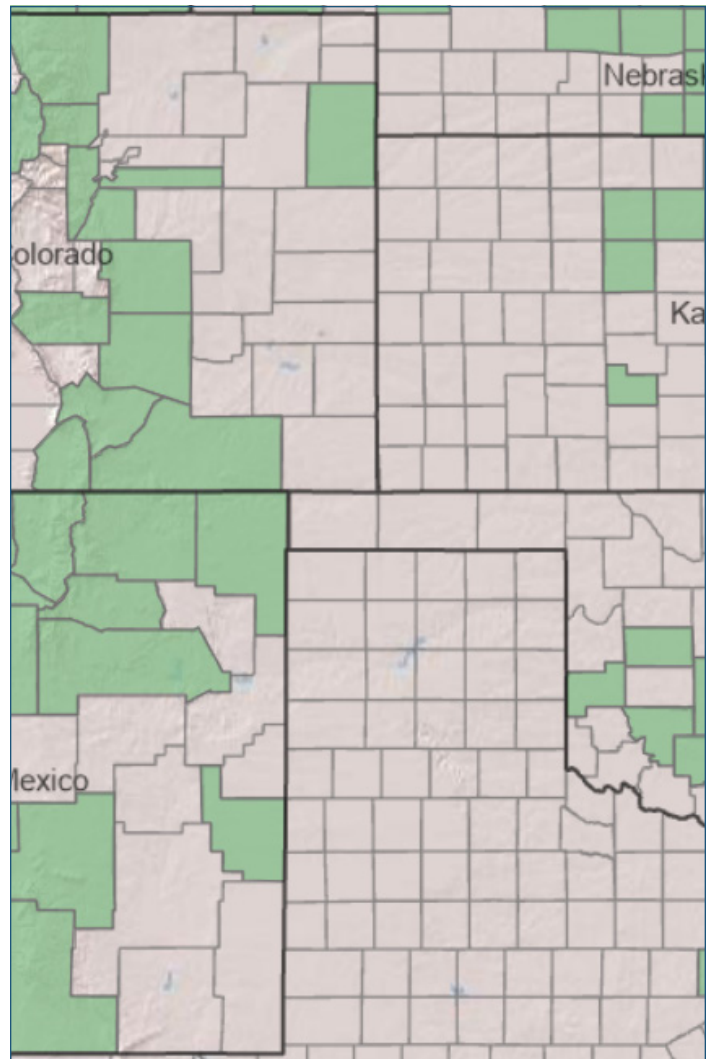




Photo: Eric Beckers, Lady Bird Johnson Wildflower Center

Close-up of bloom



Photo: Alan Cressler, Lady Bird Johnson Wildflower Center

Close-up of bloom

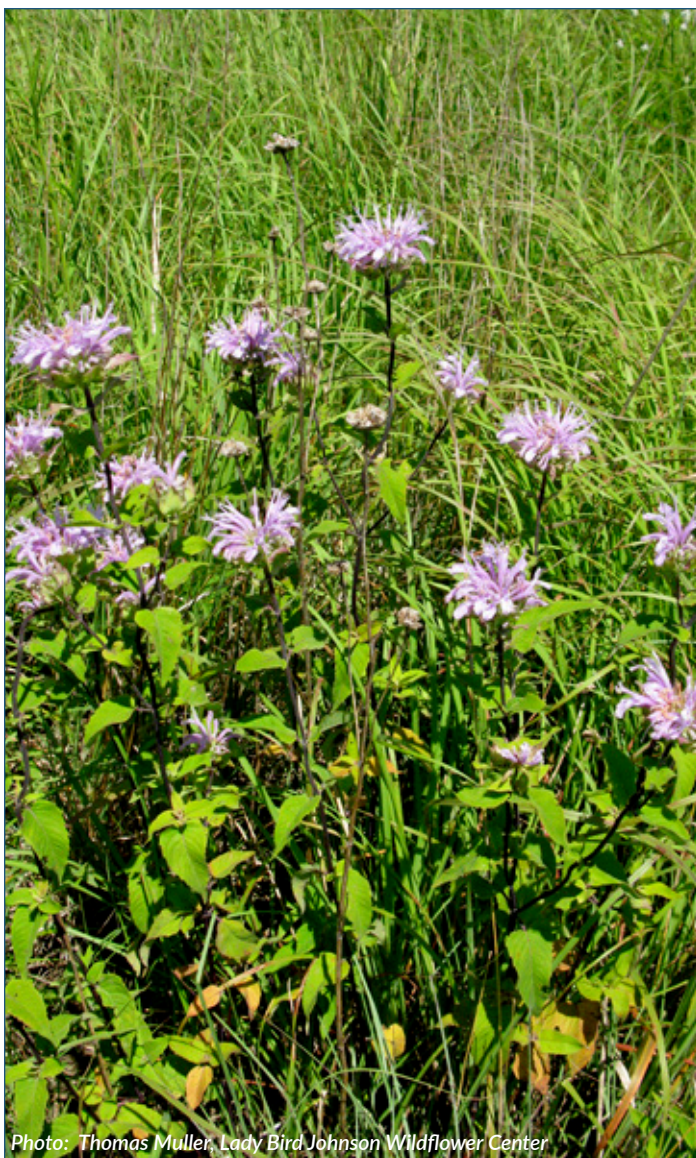


Photo: Thomas Muller, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Flower bud



Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

Foliage/leaf arrangement

Willowleaf aster (*Symphyotrichum praealtum*)

Aster Family

Other Common Names: narrow-leaf aster, willow aster

Plant Symbol: SYPR5

Scientific Name: *Symphyotrichum praealtum* Nutt.

Distinguishing characteristics: Flowering heads in crowded inflorescences; rays light violet-blue, lavender, rose-purple, or rarely white; central disk yellow to cream colored; stems usually single and erect, highly branched from above the middle; leaves lance-shaped to elliptical, without a leaf stalk, basal leaves usually absent at flowering time; leaf veins under the leaf are very prominent and forming an easily seen network; is rhizomatous and forms colonies.

Plant Height: 3–5 feet

Blooms/Fruits: August–October

Duration: Perennial

Growth Habit: Forb/herb

Pollinator Value: These flowers are known to be useful to native bees and a source of nectar for monarch butterflies.

Habitat: Wet, loamy soils, wet prairies or meadows, lake and stream shores, oak savannas, open woods or thickets, fields, moist banks, ditches, roadsides, recent clearings.

Note: Historically this plant went by the genus name *Aster* and the species *A. praealtus*. Many field guides may still list it by its older name.



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

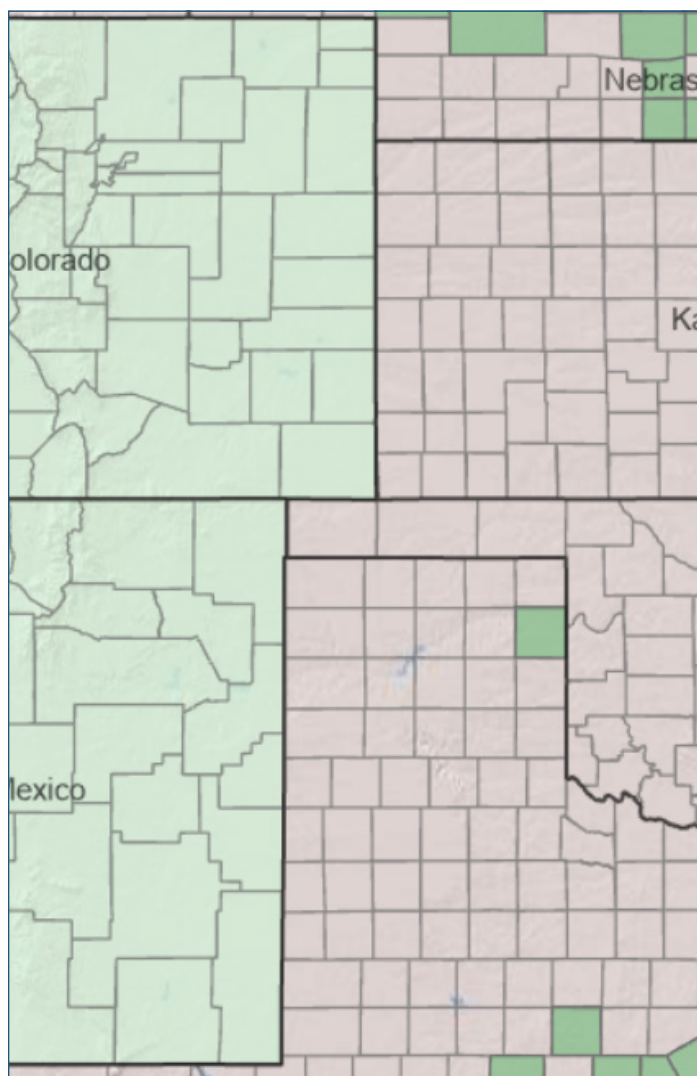




Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Close-up of bloom



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Close-up of flower bloom



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Flowering



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and leaf



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Stem and leaf

Zizotes Milkweed (*Asclepias oenotheroides*)

Milkweed Family

Other Common Names: herba de zizotes, side-clustered milkweed

Plant Symbol: ASOE

Scientific Name: *Asclepias oenotheroides* Cham. & Schltdl.

Family: Asclepiadaceae

Distinguishing characteristics: Flowers in small clusters at the junction of leaf and stem; petals greenish to cream colored and strongly reflexed; leaves are opposite or sub-opposite, egg to delta shaped.

Plant Height: 1–1.5 feet

Blooms/Fruits: May–October

Duration: Perennial

Growth Habit: Forb/herb

Pollinator Value: Zizotes milkweed is a larval host plant for the monarch butterfly. It is also a nectar source to many insects.

Habitat: Sandy or gravelly ground, calcareous soils, disturbed areas.



Photo: Robert Stone, Lady Bird Johnson Wildflower Center

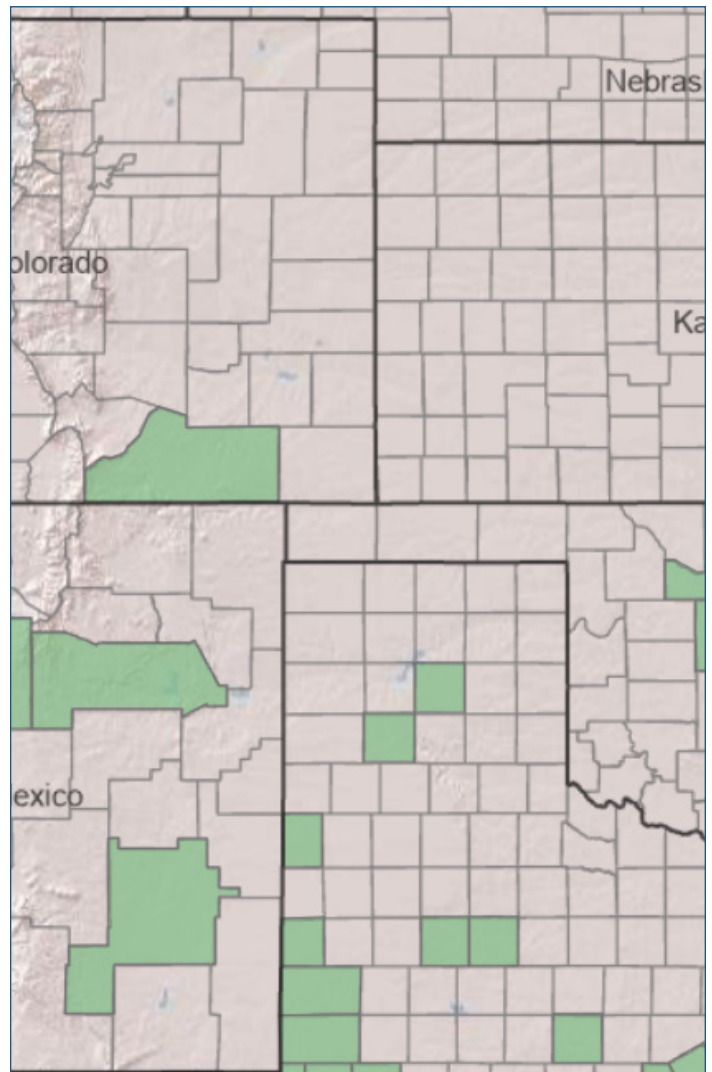




Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Fruit



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Mature fruit and seed



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center

Close-up of flowers

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