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# Important Plants of the Monarch Butterfly Southern Great Plains Staff Guide



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## Preface

The *Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG) and Decision Support Tool: Southern Great Plains Region* is used by NRCS staffs as a planning tool to evaluate current habitat conditions at the assessment area scale, not at the 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 (belt transect). Another use of the WHEG transect protocol could be 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 Kansas, 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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# Introduction

A proper understanding of 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 Great Plains Edition* (Fig. 1) is used to identify habitat deficiencies. Those identified habitat deficiencies provide targets for habitat improvements (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 2014).



Fig. 1. Southern Great Plains Region.

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

**Host Plant Selection and Monarch Survival:** Gravid monarch females are selective, preferring younger and more nutrient rich plants to lay their 300–400+ eggs over a 2–5 week period (Fischer et al. 2015). Seldom does a single female lay more than 1–2 eggs on a single plant. Additionally, gravid 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 towards 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 by gravid females for egg laying<sup>1</sup>. 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 nectaring on blue mistflower (*Conoclinium coelestinum*) in McAllen, Texas.

Gravid 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

<sup>1</sup> Some suggest that this preference is related to the high levels of cardenolides (toxins) found in tropical milkweed.

offspring to complete the larval stage<sup>2</sup>. 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 milkweeds<sup>3</sup>. Predation of eggs and larva, primarily by predatory insects, is significant. Survival rate to the 5<sup>th</sup> instar 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, and tachinid flies (*Lespesia archippivora*) in particular (Mueller and Baum 2014; Oberhauser et al. 2006). Although widely variable, percent of milkweed plants utilized by gravid females in monarch habitat is typically from 5 - 25% of available plants (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). Questions remain regarding the significance of other population stressors. There is growing evidence suggesting that in addition to loss of breeding habitat in the Midwest, losses of nectaring habitat throughout the eastern U.S. needed to support the fall migration, and the loss of wintering habitat in Mexico may be significant limiting factors (Agrawal 2017; Inamine et al. 2016).

Monarch Larval Feeding Behavior: Immature, free-living instars (larvae or 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 from 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 mammals<sup>4</sup>. However, too much cardenolide consumption affects growth and survival of larvae. For this reason, gravid females tend to select individual plants with a moderate level of cardenolides (Zalucki et al. 1990)<sup>5</sup>. First instars consume their egg casing, and then begin to feed on the surface of the leaf or flower. This feeding activity by the 1<sup>st</sup> instars is evidenced by shallow feeding grooves, often in small ½ 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 (3<sup>rd</sup>- 5<sup>th</sup> 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 (long flexible straw)

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<sup>2</sup> 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).

<sup>3</sup> On occasion, “egg dumping” from females under extreme stress does occur, resulting in plants/leaves with several (10+) eggs. Thus, egg dumping is not always an indication of inadequate milkweed availability.

<sup>4</sup> These cardenolides do not affect most predatory invertebrates. Monarch larvae experience very large losses to predation from other arthropods (e.g. insects, spiders, centipedes).

<sup>5</sup> Cardenolide levels can vary significantly, among individual plants within the same species.

to extract nectar from the flower (Krenn 2010)<sup>6</sup>. Thus, 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 (sunflowers, asters) or long multi-flowering inflorescences (gayfeather), 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 fall migration, but little about spring and summer movements. 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 suspected 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 2<sup>nd</sup> 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 2<sup>nd</sup> 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 1<sup>st</sup> generation adults migrate from the southern U.S. primarily, but far from exclusively, to the Midwest and Great Lakes region. The 2<sup>nd</sup> generation then spreads out across the U.S. and southern Canada, with many of the 3<sup>rd</sup> and 4<sup>th</sup> 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 (migration is a very high mortality event), maximizing numbers in preparation for the long and often fatal migration to the wintering grounds (Agrawal 2017).

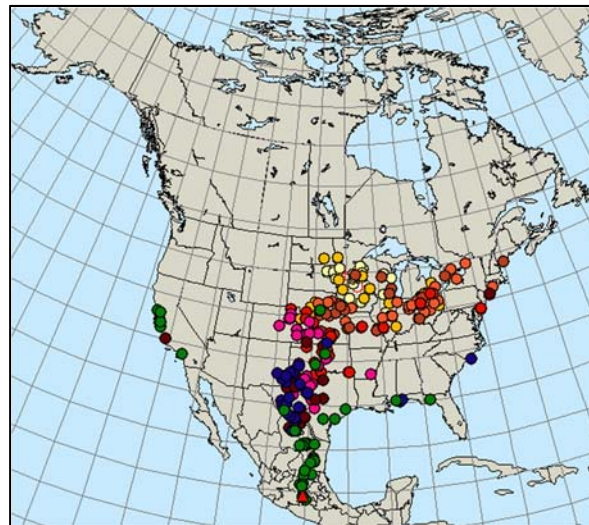
Regardless of the northern migration patterns, monarchs emerging as adults in late summer migrate south to Mexico to repeat the cycle. Non-migrating adults live from 2-5 weeks, whereas migrating adults live through the fall and winter for 6-9 months. Most theorize they accomplish long distance travel 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)<sup>7</sup>. 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.

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<sup>6</sup> Monarch butterflies are ineffective pollinators of milkweed (Agrawal 2017), and only incidental pollinators of other species.

<sup>7</sup> Monarchs do not feed at the wintering grounds, but do move to access water during warmer days. Thus, the stored lipids are critical to winter survival.

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 south eastern North Dakota, eastern South Dakota, and east-central Nebraska. In some years (2015), strong easterly winds move fall migrants even further west (Fig. 3). During such years, the northern Great Plains plays a critical role in providing fall nectaring resources for migrating monarchs. In response to elevated grain prices, recent land use conversion from grasslands to cropland (Wright and Wimberly 2013), may rival losses of “in-field” milkweed from glyphosate resistant seed technology. Losses of nectar plants, in addition to milkweed due to land use changes in central portions of the northern Great Plains remain a concern for monarch butterfly conservation.



*Fig. 3. Fall Monarch Butterfly “Roost Sightings” map for 2015 (Journey North). The strong easterly and southeasterly winds pushed the migration well west of the normal patterns. Fall nectaring habitats, particularly in central NE and western KS 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 soil type. The deep clay soils in the Blackland Prairie of Texas, and sandy soils of Texas, Oklahoma, and Kansas support primarily green milkweed (*Asclepias viridis*). Some refer to this species as green antelope horns. This species is less drought tolerant than spider milkweed, also referred to as antelope horns (*Asclepias asperula*). *Asclepias asperula* is most commonly found on shallow limestone soils, common to the Edwards Plateau and portions of the Texas Cross Timbers ecoregions (Griffith et al. 2007). Zizotes milkweed, also called side-cluster milkweed (*Asclepias oenotheroides*), thrives in areas with low vegetation (routinely mowed or heavily grazed), and is more common in the south central portion of the subregion. Based on the distribution of these three species in central TX (Calvert 1996), *Asclepias oenotheroides* appears to be less drought tolerant than *Asclepias asperula* and less tolerant of acidic soils than *Asclepias viridis*. A fourth species, butterfly milkweed (*Asclepias tuberosa*) is adapted to sandy, non-alkaline soils that are not typically shallow to bedrock. This species of milkweed occurs more commonly in Oklahoma and Kansas than in Texas. Unlike seeds for the other three species of *Asclepias* mentioned in this document, commercial seeds for *A. tuberosa* are readily available. Because butterfly milkweed is not well adapted to shallow



*Fig. 4. Asclepias asperula, a milkweed common to Texas in areas with shallow limestone soils.*

and/or calcareous soils, so the opportunities for the use of this plant is limited in the subregion. The milkweed of the greatest abundance and distribution in the Midwestern U.S is common milkweed (*A. syriaca*). This species occurs in eastern Kansas but is infrequent in Oklahoma and virtually non-existent in Texas. Lastly, planting of the non-native tropical milkweed (*Asclepias curassavica*) is not recommended and shall not be included in any NRCS seeding mix recommendations.

Trees and Shrubs: Narrow bands of woody vegetation and edges of forested areas can provide important fall resting sites (microclimates) for migrating monarchs. However, the planting list provided in this document is limited to herbaceous species.

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 Great 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. Conservation Cover (327) and Field Borders (386)). Lists of larval host plants and nectar plants suitable for monarch butterfly habitat plantings are provided in the NRCS Field Office Technical Guide (FOTG). The following national minimum planting criteria shall be followed for all monarch butterfly habitat plantings. Nationally approved variances to these requirements may be provided by the FOTG.

- To provide food for monarch butterfly larvae, plantings shall include at least one species of milkweed (*Asclepias* spp.) from the FOTG monarch butterfly planting list. All milkweed species used in the mix must be from this list and shall represent at least 1.5% 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 Great 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.

- A grass component in a monarch habitat planting is commonly needed for ecological stability, weed control, and fuel for prescribed burning. The FOTG provides information on the grass/forb ratio for monarch habitat plantings.
- To provide food for adults, at least 60% of the forb seeds (pure live seed) in the mix shall be from the monarch butterfly planting list (FOTG). Milkweed seeds are included in meeting the 60% minimum because milkweeds are excellent nectar plants. The FOTG provides information on the required number of forb species per bloom period (early, mid, or late season) for monarch habitat plantings. Bloom period consideration shall coincide with monarch presence in the area.

**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 Great 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 blazing star, also commonly referred to as gayfeather. These are all in the genus *Liatris*. Identification of *Liatris* to species adds little value to the habitat assessment process. As such, they are combined into the *Liatris* 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 Great 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” value.

### **Acknowledgements**

We would like to thank the following specialists who contributed records and observations to help the in the development of these lists. Kristen Baum and Shaun McCoshum of Oklahoma State University, Carol Clark, Kip Kiphart and Mike Quinn of the Austin Butterfly Forum, Roger Sanderson of the Texas Discovery Gardens at Fair Park, and Anne Stine of the Xerces Society. Also providing input to the second version of this edition were biologists from Xerces, USDA-NRCS, U.S. Fish and Wildlife Service, state resource management agencies, universities and conservations organizations.

# Monarch Planting List

Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period			States		
					Early	Mid	Late	KS	OK	TX
<i>Amorpha canescens</i>	AMCA6	leadplant	shrub, subshrub	High		x				
<i>Asclepias asperula</i>	ASAS	antelope horn	forb/herb	Very High	x		x			
<i>Asclepias incarnata</i>	ASIN	swamp milkweed	forb/herb	Very High		x	x			
<i>Asclepias latifolia</i>	ASLA4	broadleaf milkweed	forb/herb	Very High	x	x				
<i>Asclepias oenotheroides</i>	ASOE	zizotes milkweed	forb/herb	Very High	x	x				
<i>Asclepias speciosa</i>	ASSP	showy milkweed	forb/herb	High	x	x	x			
<i>Asclepias sullivantii</i>	ASSU3	prairie milkweed	forb/herb	High		x				
<i>Asclepias syriaca</i>	ASSY	common milkweed	forb/herb	Very High		x				
<i>Asclepias tuberosa</i>	ASTU	butterfly milkweed	forb/herb	High	x	x	x			
<i>Asclepias viridis</i>	ASVI2	green milkweed	forb/herb	Very High	x	x	x			
<i>Bidens aristosa</i>	BIAR	bearded beggarticks	forb/herb	Very High		x				
<i>Castilleja indivisa</i>	CAIN13	Indian paintbrush	forb/herb	High	x					
<i>Centaurea americana</i>	CEAM2	basket flower	forb/herb	High		x				
<i>Conoclinium betonicifolium</i>	COBE4	betonyleaf thoroughwort	forb/herb	High	x	x	x			
<i>Conoclinium coelestinum</i>	COCO13	blue mistflower	forb/herb	Very High		x	x			
<i>Conoclinium greggii</i>	COGR10	palmleaf thoroughwort	forb/herb	High	x	x	x			
<i>Coreopsis palmata</i>	COPA10	stiff tickseed	forb/herb	High		x	x			
<i>Cunila origanoides</i>	CUOR	common dittany	forb/herb, subshrub	High		x	x			
<i>Dalea candida</i>	DACA7	white prairie clover	forb/herb, subshrub	High	x	x				
<i>Dalea multiflora</i>	DAMU	Roundhead prairie clover	forb/herb	High	x	x				
<i>Dalea purpurea</i>	DAPU5	purple prairie clover	forb/herb	High		x	x			
<i>Echinacea angustifolia</i>	ECAN2	black Samson echinacea	forb/herb	High		x	x			
<i>Echinacea pallida</i>	ECPA	pale purple coneflower	forb/herb	High	x	x				
<i>Echinacea purpurea</i>	ECPU	eastern purple coneflower	forb/herb	Very High	x	x	x			
<i>Engelmannia peristenia</i>	ENPE4	Engelmann's daisy	forb/herb	high	x	x	x			
<i>Eryngium leavenworthii</i>	ERLE11	Leavenworth's eryngo	forb/herb	High		x				
<i>Eryngium yuccifolium</i>	ERYU	rattlesnake master	forb/herb	High	x	x	x			
<i>Erysimum asperum</i>	ERAS2	western wallflower	forb/herb	high	x					

Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period			States		
					Early	Mid	Late	KS	OK	TX
<i>Eupatorium perfoliatum</i>	EUPE3	common boneset	forb/herb	High		x	x			
<i>Eupatorium serotinum</i>	EUSE2	lateflowering thoroughwort	forb/herb	Very High		x	x			
<i>Eutrochium purpureum</i>	EUPU21	sweetscented joe pye weed	forb/herb	High		x	x			
<i>Funastrum cynanchoides</i>	FUCY	finged twinevine	forb/herb	High	x	x				
<i>Giandularia bipinnatifida</i>	GLBI2	Dakota mock vervain	forb/herb	High	x	x	x			
<i>Grindelia papposa</i>	GRPA8	Spanish gold	forb/herb	Very High			x			
<i>Helenium amarum</i>	HEMA	sneezeweed	forb/herb	High	x	x	x			
<i>Helianthus angustifolius</i>	HEAN2	swamp sunflower	forb/herb	High		x	x			
<i>Helianthus annuus</i>	HEAN3	common sunflower	forb/herb	High		x	x			
<i>Helianthus grosseserratus</i>	HEGR4	sawtooth sunflower	forb/herb	High		x	x			
<i>Helianthus maximiliani</i>	HEMA2	Maximilian sunflower	forb/herb	Very High		x	x			
<i>Helianthus mollis</i>	MEMO2	ashy sunflower	forb/herb	high		x	x			
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/herb	High		x	x			
<i>Liatris aspera</i>	LIAS	tall blazing star	forb/herb	Very High			x			
<i>Liatris elegans</i>	LIEL	pink-scale blazing star	forb/herb	High		x	x			
<i>Liatris punctata</i>	LIPU	dotted blazing star	forb/herb	Very High		x	x			
<i>Liatris pycnostachya</i>	LIPY	prairie blazing star	forb/herb	High		x	x			
<i>Liatris squarrosa</i>	LISQ	scaly Blazing Star	forb/herb	High		x	x			
<i>Lithospermum incisum</i>	LIIN2	narrowleaf stoneseed	forb/herb	High	x	x				
<i>Monarda citriodora</i>	MOCI	lemon beebalm	forb/herb	High	x	x				
<i>Monarda fistulosa</i>	MOFI	wild bergamot	forb/herb, subshrub	High		x	x			
<i>Monarda punctata</i>	MOPU	spotted beebalm	forb/herb, subshrub	High	x	x	x			
<i>Oligoneuron nitidum</i>	OLNI	shiny goldenrod	forb/herb	High		x	x			
<i>Oligoneuron rigidum</i>	OLRI	stiff goldenrod	forb/herb	High			x			
<i>Onosmodium bejariense</i>	ONBE	soft-hair marbleseed	forb/herb	High		x				
<i>Packera obovata</i>	PAOB6	roundleaf ragwort	forb/herb	High		x	x			
<i>Phlox divaricata</i>	PHDI5	wild blue phlox	forb/herb	High	x					
<i>Polygonum pensylvanicum</i>	POPEO2	Pennsylvania smartweed	forb/herb	High		x	x			
<i>Rudbeckia hirta</i>	RUHI2	blackeyed Susan	forb/herb	High		x	x			



Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period			States		
					Early	Mid	Late	KS	OK	TX
<i>Salvia azurea</i>	SAAZ	blue sage	forb/herb	High			x			
<i>Silphium integrifolium</i>	SIIN2	wholeleaf rosinweed	forb/herb	High		x	x			
<i>Silphium laciniatum</i>	SILA3	compassplant	forb/herb	High		x	x			
<i>Silphium perfoliatum</i>	SIPE2	cup plant	forb/herb	High		x	x			
<i>Silphium radula</i>	SIRA2	roughstem rosinweed	forb/herb	High		x				
<i>Simsia calva</i>	SICA7	awnless bushsunflower	forb/herb	High		x	x			
<i>Solidago canadensis</i>	SOCA6	Canada goldenrod	forb/herb	High			x			
<i>Solidago nemoralis</i>	SONE	gray goldenrod	forb/herb	Very High		x	x			
<i>Solidago petiolaris</i>	SOPE	downy ragged goldenrod	forb/herb	High		x	x			
<i>Solidago rugosa</i>	SORU2	wrinkleleaf goldenrod	forb/herb	High		x	x			
<i>Solidago speciosa</i>	SOSP2	showy goldenrod	forb/herb	Very High		x	x			
<i>Symphotrichum ericoides</i>	SYER	white heath aster	forb/herb	High		x	x			
<i>Symphotrichum laeve</i>	SYLA3	smooth blue aster	forb/herb	High		x	x			
<i>Symphotrichum novae-angliae</i>	SYNO2	New England aster	forb/herb	Very High		x	x			
<i>Symphotrichum oblongifolium</i>	SYOB	aromatic aster	forb/herb	High			x			
<i>Symphotrichum praealtum</i>	SYPR5	willowleaf aster	forb/herb	High		x	x			
<i>Verbena halei</i>	VEHA	Texas vervain	forb/herb	High	x	x	x			
<i>Verbena stricta</i>	VEST	hoary verbena	forb/herb	High	x	x	x			
<i>Verbesina encelioides</i>	VEEN	golden crownbeard	forb/herb	Very High	x	x	x			
<i>Verbesina virginica</i>	VEVI3	white crownbeard	forb/herb	Very High		x	x			
<i>Vernonia baldwinii</i>	VEBA	Baldwin's ironweed	forb/herb	High		x	x			
<i>Vernonia fasciculata</i>	VEFA2	prairie ironweed	forb/herb	High		x	x			
<i>Wedelia acapulcensis</i>	WEAC	hairy wedelia	forb/herb	High	x	x	x			

USDA, NRCS. 2017. PLANTS Database (<http://plants.usda.gov>). National Plant Data Team, Greensboro, NC 27401-4901 USA.

# Monarch WHEG Inventory Plant List









































































Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period			States		
					Early	Mid	Late	KS	OK	TX
<i>Amorpha canescens</i>	AMCA6	leadplant	shrub, subshrub	High		x				
<i>Asclepias</i> spp.	ASCLE	antelope horn	forb/herb	Very High	x		x			
<i>Bidens aristosa</i>	BIAR	bearded beggarticks	forb/herb	Very High		x				
<i>Castilleja indivisa</i>	CAIN13	Indian paintbrush	forb/herb	High	x					
<i>Centaurea americana</i>	CEAM2	basket flower	forb/herb	High		x				
<i>Conoclinium</i> spp.	CONOC4	betonyleaf thoroughwort	forb/herb	High	x	x	x			
<i>Coreopsis palmata</i>	COPA10	stiff tickseed	forb/herb	High		x	x			
<i>Cunila origanoides</i>	CUOR	common dittany	forb/herb, subshrub	High		x	x			
<i>Dalea</i> spp.	DALEA	white prairie clover	forb/herb, subshrub	High	x	x				
<i>Echinacea</i> spp.	ECHIN	black Samson echinacea	forb/herb	High		x	x			
<i>Engelmannia peristenia</i>	ENPE4	Engelmann's daisy	forb/herb	High	x	x	x			
<i>Eryngium</i> spp.	ERYNG	Leavenworth's eryngo	forb/herb	High		x				
<i>Erysimum asperum</i>	ERAS2	western wallflower	forb/herb	high	x					
<i>Eupatorium</i> spp.	EUPAT	common boneset	forb/herb	High		x	x			
<i>Eutrochium purpureum</i>	EUPU21	sweetscented joe pye weed	forb/herb	High		x	x			
<i>Funastrum cynanchoides</i>	FUCY	finged twinevine	forb/herb	High	x	x				
<i>Glandularia bipinnatifida</i>	GLBI2	Dakota mock vervain	forb/herb	High	x	x	x			
<i>Grindelia papposa</i>	GRPA8	Spanish gold	forb/herb	Very High			x			
<i>Helenium amarum</i>	HEMA	sneezeweed	forb/herb	High	x	x	x			
<i>Helianthus</i> spp.	HELIA3	common sunflower	forb/herb	High		x	x			
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/herb	High		x	x			
<i>Liatris</i> spp.	LIATR	tall blazing star	forb/herb	Very High			x			
<i>Lithospermum incisum</i>	LIIN2	narrowleaf stoneseed	forb/herb	High	x	x				
<i>Monarda</i> spp.	MONAR	lemon beebalm	forb/herb	High	x	x				
<i>Oligoneuron</i> spp.	OLIGO3	shiny goldenrod	forb/herb	High		x	x			
<i>Onosmodium bejariense</i>	ONBE	soft-hair marbleseed	forb/herb	High		x				
<i>Packera obovata</i>	PAOB6	roundleaf ragwort	forb/herb	High		x	x			
<i>Phlox divaricata</i>	PHDI5	wild blue phlox	forb/herb	High	x					
<i>Polygonum pensylvanicum</i>	POPEO2	Pennsylvania smartweed	forb/herb	High		x	x			

Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period			States		
					Early	Mid	Late	KS	OK	TX
<i>Rudbeckia hirta</i>	RUHI2	blackeyed Susan	forb/herb	High		x	x			
<i>Salvia azurea</i>	SAAZ	blue sage	forb/herb	High			x			
<i>Simsia calva</i>	SICA7	awnless bushsunflower	forb/herb	High		x	x			
<i>Silphium</i> spp.	SILPH	wholeleaf rosinweed	forb/herb	High		x	x			
<i>Solidago</i> spp.	SOLID	Canada goldenrod	forb/herb	High			x			
<i>Symphotrichum</i> spp.	SYER	white heath aster	forb/herb	High		x	x			
<i>Verbena</i> spp.	VERBE	Texas vervain	forb/herb	High	x	x	x			
<i>Verbesina</i> spp.	VERBE2	golden crownbeard	forb/herb	Very High	x	x	x			
<i>Vernonia</i> spp.	VERNO	Baldwin's ironweed	forb/herb	High		x	x			
<i>Wedelia acapulcensis</i>	WEAC	hairy wedelia	forb/herb	High	x	x	x			

USDA, NRCS. 2017. PLANTS Database (<http://plants.usda.gov>). National Plant Data Team, Greensboro, NC 27401-4901 USA.

## Flower Color Chart

Common Name	Flower Color	Scientific Name	Flower Color
antelope horn		<i>Amorpha canescens</i>	
aromatic aster		<i>Asclepias asperula</i>	
ashy sunflower		<i>Asclepias incarnata</i>	
awnless bushsunflower		<i>Asclepias latifolia</i>	
Baldwin's ironweed		<i>Asclepias oenotheroides</i>	
basket flower		<i>Asclepias speciosa</i>	
bearded beggarticks		<i>Asclepias sullivantii</i>	
betonyleaf thoroughwort		<i>Asclepias syriaca</i>	
black Samson echinacea		<i>Asclepias tuberosa</i>	
blackeyed Susan		<i>Asclepias viridis</i>	
blue mistflower		<i>Bidens aristosa</i>	
blue sage		<i>Castilleja indivisa</i>	
broadleaf milkweed		<i>Centaurea americana</i>	
butterfly milkweed		<i>Conoclinium betonicifolium</i>	
Canada goldenrod		<i>Conoclinium coelestinum</i>	
common boneset		<i>Conoclinium greggii</i>	
common dittany		<i>Coreopsis palmata</i>	
common milkweed		<i>Cunila origanoides</i>	
common sunflower		<i>Dalea candida</i>	
compassplant		<i>Dalea multiflora</i>	
cup plant		<i>Dalea purpurea</i>	
Dakota mock vervain		<i>Echinacea angustifolia</i>	
dotted blazing star		<i>Echinacea pallida</i>	
downy ragged goldenrod		<i>Echinacea purpurea</i>	
eastern purple coneflower		<i>Engelmannia peristenia</i>	
Engelmann's daisy		<i>Eryngium leavenworthii</i>	
finged twinevine		<i>Eryngium yuccifolium</i>	
golden crownbeard		<i>Erysimum asperum</i>	
gray goldenrod		<i>Eupatorium perfoliatum</i>	
green milkweed		<i>Eupatorium serotinum</i>	
hairy wedelia		<i>Eutrochium purpureum</i>	
hoary verbena		<i>Funastrum cynanchoides</i>	
Indian paintbrush		<i>Glandularia bipinnatifida</i>	
lateflowering thoroughwort		<i>Grindelia papposa</i>	
leadplant		<i>Helenium amarum</i>	
Leavenworth's eryngo		<i>Helianthus angustifolia</i>	
lemon beebalm		<i>Helianthus annuus</i>	
Maximilian sunflower		<i>Helianthus grosseserratus</i>	
narrowleaf stoneseed		<i>Helianthus maximiliani</i>	
New England aster		<i>Helianthus mollis</i>	
pale purple coneflower		<i>Heliopsis helianthoides</i>	
palmleaf thoroughwort		<i>Liatris aspera</i>	
Pennsylvania smartweed		<i>Liatris elegans</i>	
pink-scale blazing star		<i>Liatris punctata</i>	

Common Name	Flower Color	Scientific Name	Flower Color
prairie blazing star		<i>Liatris pycnostachya</i>	
prairie ironweed		<i>Liatris squarrosa</i>	
prairie milkweed		<i>Lithospermum incisum</i>	
purple prairie clover		<i>Monarda citriodora</i>	
rattlesnake master		<i>Monarda fistulosa</i>	
roughstem rosinweed		<i>Monarda punctata</i>	
roundhead prairie clover		<i>Oligoneuron nitidum</i>	
roundleaf ragwort		<i>Oligoneuron rigidum</i>	
sawtooth sunflower		<i>Onosmodium bejariense</i>	
scaly blazing Star		<i>Packera obovata</i>	
shiny goldenrod		<i>Phlox divaricata</i>	
showy goldenrod		<i>Polygonum pennsylvanicum</i>	
showy milkweed		<i>Rudbeckia hirta</i>	
smooth blue aster		<i>Salvia azurea</i>	
smooth oxeye		<i>Silphium integrifolium</i>	
sneezeweed		<i>Silphium laciniatum</i>	
soft-hair marbleseed		<i>Silphium perfoliatum</i>	
Spanish gold		<i>Silphium radula</i>	
spotted beebalm		<i>Simsia calva</i>	
stiff goldenrod		<i>Solidago canadensis</i>	
stiff tickseed		<i>Solidago nemoralis</i>	
swamp milkweed		<i>Solidago petiolaris</i>	
Swamp sunflower		<i>Solidago rugosa</i>	
sweetscented joe pye weed		<i>Solidago speciosa</i>	
tall blazing star		<i>Symphotrichum ericoides</i>	
Texas vervain		<i>Symphotrichum laeve</i>	
western wallflower		<i>Symphotrichum novae-angliae</i>	
white crownbeard		<i>Symphotrichum oblongifolium</i>	
white heath aster		<i>Symphotrichum praealtum</i>	
white prairie clover		<i>Wedelia acapulcensis</i>	
wholeleaf rosinweed		<i>Verbena halei</i>	
wild bergamot		<i>Verbena stricta</i>	
wild blue phlox		<i>Verbesina encelioides</i>	
willowleaf aster		<i>Verbesina virginica</i>	
wrinkleleaf goldenrod		<i>Vernonia baldwinii</i>	
zizotes milkweed		<i>Vernonia fasciculata</i>	

# American Star-thistle (*Centaurea Americana*)

## Aster Family

**Other Common Names:** American basket flower, American knapweed, powderpuff thistle, shaving brush

**Scientific Name:** *Centaurea americana* Nutt.

**Plant Symbol:** CEAM2

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 2-6 ft.

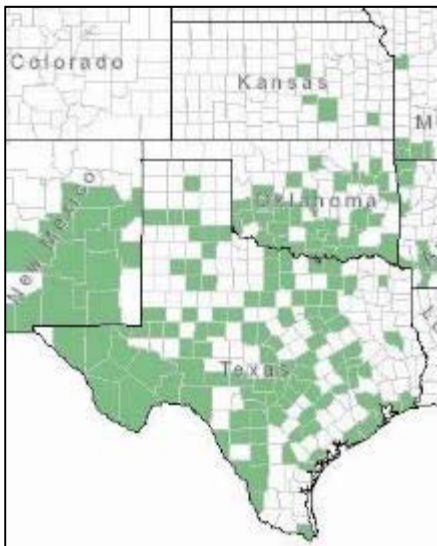
**Blooms/Fruits:** May-June

**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).

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

**Habitat:** Dry to mesic soils, disturbed sites.

**Note:** This genus (*Centaurea*) also includes the non-native bachelor-buttons and highly invasive species yellow star-thistle.





Close-up of flower

Flower bud/full flowering/spent



Leaf arrangement



Mature

# Aromatic Aster (*Symphotrichum oblongifolium*)

## Aster Family

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

**Scientific Name:** *Symphotrichum 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 ft.

**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.

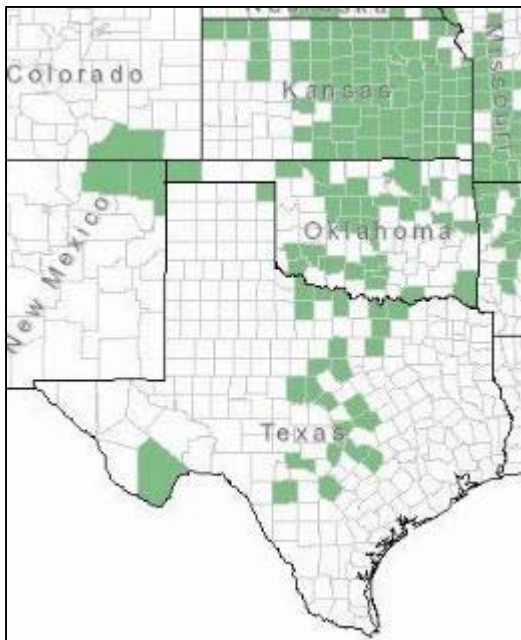






Photo: Mike Haddock



Photo: Mike Haddock

Full flowering/close-up of flowers



2013 © Peter M. Dziuk



© 2009 Katy Chayka

Close-up of leaf/foliage

# Ashy Sunflower (*Helianthus mollis*)

Aster Family

**Other Common Names:** downy sunflower, hairy sunflower

**Scientific Name:** *Helianthus mollis* Lam.

**Plant Symbol:** HEMO2

**Distinguishing characteristics:** Stems developing from thick spreading rhizomes and often colonial, stems densely hairy with short, raspy hairs that give the plant a grey appearance; leaves opposite on the stem, very wide at the base and with a pointed tip, leaves attached directly to the stem without a leaf stalk and appear to clasp the stem, hairy and appearing grey-green from all the leaf hairs; inflorescences daisy-like, single or more commonly several on the ends of branches, about 3-5 in. across; rays yellow, centers yellow to yellowish-brown.

**Plant Height:** 2-4 ft.

**Blooms/Fruits:** June–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** Attracts multiple genera of long-tongued bees (including bumblebees), short-tongued bees, flies, beetles, and butterflies.

**Habitat:** Upland prairies, pastures, sandy open woodlands, old fields, and fencerows.

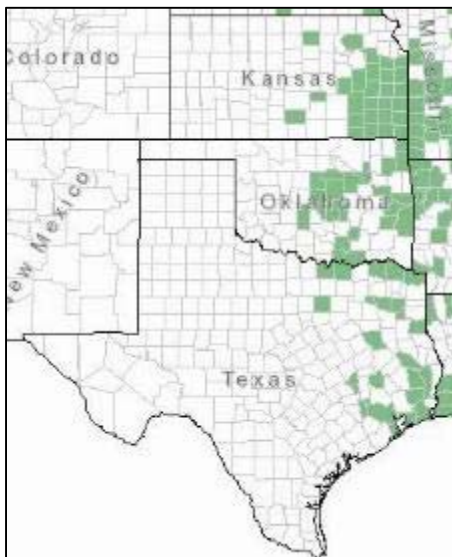


Photo: Mike Haddock



Full flowering/close-up of bracts



Leaf arrangement and stem

# Awnless Bushsunflower (*Simsia calva*)

Aster Family

**Other Common Names:** bush sunflower, awnless bush sunflower

**Scientific Name:** *Simsia calva* (Engelm. & A. Gray) A. Gray      **Plant Symbol:** SICA7

**Distinguishing characteristics:** Stems usually branched, woody and shrub-like near the base and herbaceous in the upper parts, coarsely hairy throughout; leaves opposite, with leaf stems, delta-shaped, often lobed and serrated along the margin; flowering heads solitary on long stems; rays yellow to orange-yellow and sometimes spotted or striped with purple or red under the ray; centers yellow to yellow-orange.

**Plant Height:** 1-3 ft.

**Blooms/Fruits:** May-November

**Duration:** Annual to Perennial, subshrub

**Pollinator Value:** This species is visited by a variety of bees, but is particularly attractive to butterflies, and serves as a host plant for the bordered patch butterfly.

**Habitat:** Dry uplands, well-drained limestone, and caliche.

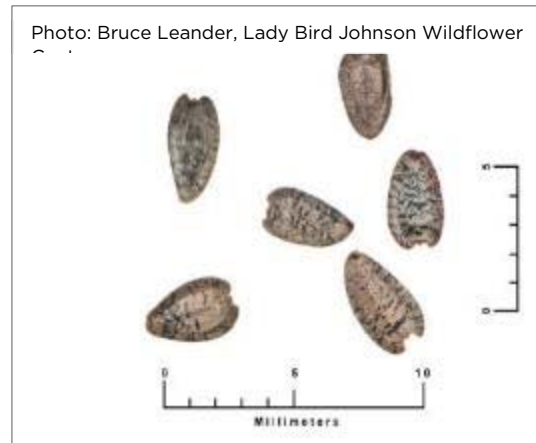




Full flowering, close-up of flowers



Foliage



Seed

# Azure Blue Sage (*Salvia azurea*)

Mint Family

**Other Common Names:** azure sage, pitcher sage

**Scientific Name:** *Salvia azurea* Michx. ex Lam.

**Plant Symbol:** SAAZ

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 2-5 ft.

**Blooms/Fruits:** July-November

**Distinguishing characteristics:** Sky blue flowers with a white center and a pronounced lower lip; leaves linear to lance shaped, the lower ones falling off at flowering time; stems uniformly hairy with short recurved hairs.

**Pollinator Value:** Blue sage is highly attractive to monarch butterflies, bumblebees, and other long-tongued bees.

**Habitat:** Rocky & clayey prairies, uplands, pastures, roadsides, and fencerows.

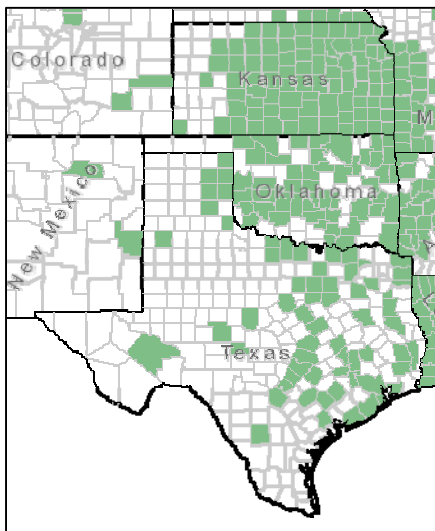


Photo: W.D. and Dolphia Branford, Lady Bird Johnson Wildflower Center



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Early flowering



Photo: Alan Cressler, Lady Bird Johnson Wildflower Center



Photo: Anne Stine, Xerces



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

Close-up of flowers/full flowering



Photo: Southeasternflora.com

Close-up of stem and leaves



Photo: Southeasternflora.com

Leaf arrangement

# Baldwin's Ironweed (*Vernonia baldwinii*)

Aster Family

**Other Common Names:** ironweed, western ironweed

**Scientific Name:** *Vernonia baldwinii* Torr.

**Plant Symbol:** VEBA

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 3-5 ft.

**Blooms/Fruits:** July-November

**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.

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

**Habitat:** Open pastures & woodlands, savannahs, fencerows, overgrazed pastures.

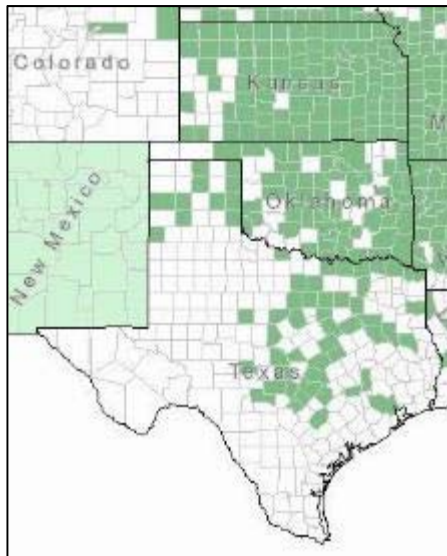


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center





Photo: Sandy Smith, Lady Bird Johnson Wildflower



Photo: Joseph Marcus, Lady Bird Johnson Wildflower



Photo: Sandy Smith, Lady Bird Johnson Wildflower

Close-up of flower/flowering



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Leaves



Photo: Sandy Smith, Lady Bird Johnson Wildflower

Close-up of flower buds



Photo: John Hilty, Illinois Wildflowers

Senescence

# Bearded Beggarticks (*Bidens aristosa*)

Aster Family

**Other Common Names:** awnless beggarticks, tickseed sunflower

**Scientific Name:** *Bidens aristosa* (Michx.) Britton

**Plant Symbol:** BIAR

**Family:** Asteraceae

**Duration:** Annual or Biennial

**Growth Habit:** Forb/herb

**Plant Height:** variable, 1-5 ft.

**Blooms/Fruits:** April-October

**Distinguishing characteristics:** Leaves opposite on the stem, 1-2 times dissected with multiple segments on each leaf; flower heads with bright to golden yellow rays and with a black and yellow center; seeds with awns on top like most beggartick species.

**Pollinator Value:** Highly attractive to monarch butterflies and many other insects including native bees.

**Habitat:** Low moist ground, wetlands, and ditches.

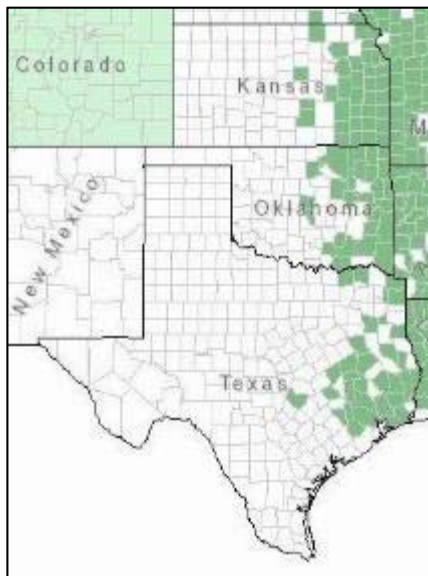


Photo: Mike Haddock



Full flowering/close-up of flower



Stem and leaf



Seedling



Seed

# Betonyleaf Thoroughwort (*Conoclinium betonicifolium*)

**Aster Family**

**Other Common Names:** Betonyleaf mistflower

**Scientific Name:** *Conoclinium betonicifolium* (Mill.) R.M. King & H. Rob. **Plant Symbol:** COBE4

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-3 ft.  
October

**Blooms/Fruits:** March-June; September-

**Distinguishing characteristics:** Leaves fleshy with toothed (pointed or rounded) margins; flower heads pale blue to purple powder-puff clusters; stems spread across the ground with upturned stem tips, rooting along the stem. Plants can be horizontal or spreading.

**Pollinator Value:** Betonyleaf mistflower is a valuable nectar source, favored by many bees and butterflies. Male queen butterflies, another species of milkweed butterfly similar to the monarch, collect alkaloids from the nectar of these flowers to use in their courtship of females. Males can be seen nectaring in huge aggregations on these plants.

**Habitat:** Sands and sandy clays, coastal dunes, beaches, saltmarshes in TX and Mexico.

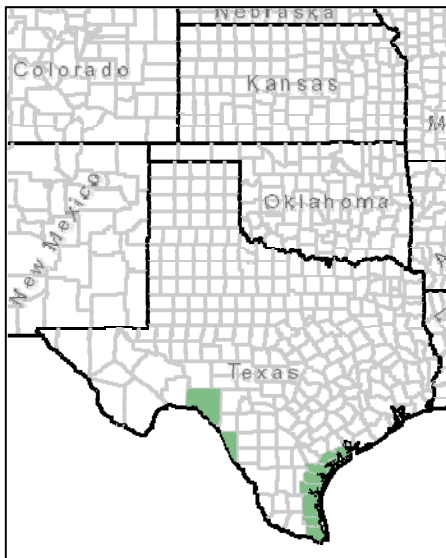


Photo: Texas Nature Conservancy, William Carr



Photo: Joseph Marcus, Lady Bird Johnson  
Wildflower Center

Foliage



Photo: Texas Nature Conservancy and William Carr

Flowering

## 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:** Flower heads daisy-like in overall appearance, but with yellow to orange-yellow rays and a dark purple to brown conical center, the rays may have a deep maroon to purple base; leaves are variable - larger and with a leaf stem towards the base, smaller and without a leaf stem towards the middle and top of the plant, all leaves with short, stiff hairs and have a raspy feel.

**Plant Height:** 2-3 ft., erect

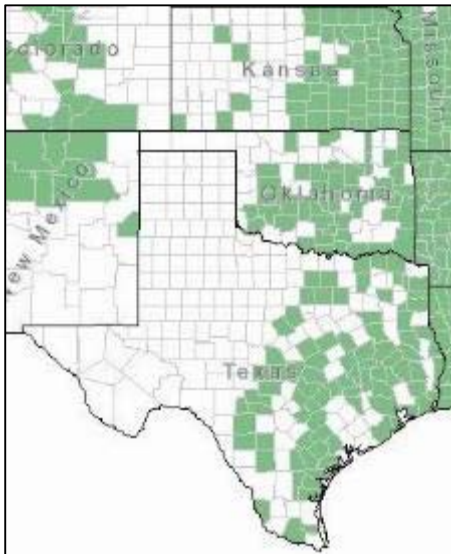
**Blooms/Fruits:** June–October

**Duration:** Annual, Biennial, to short lived Perennial, herbaceous (developing taproots)

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





Seedlings



Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower

Full flowering/close-up of blooms



Photo: Thomas Muller, Lady Bird Johnson Wildflower

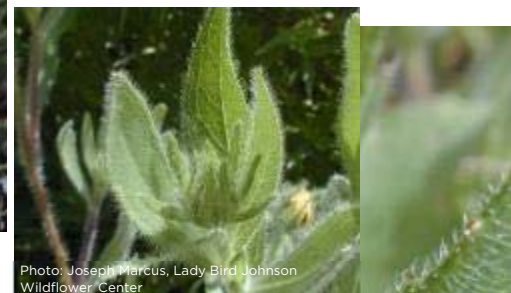


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Stanley Harmon, Lady Bird Johnson Wildflower Center

Mature plant



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and leaf

# Blacksamson Echinacea (*Echinacea angustifolia*)

**Aster Family**

**Other Common Names:** blacksamson, narrow-leaf echinacea, narrow-leaf purple coneflower

**Scientific Name:** *Echinacea angustifolia* DC.

**Plant Symbol:** ECAN2

**Duration:** Perennial

**Growth Habit:** Forb/herb

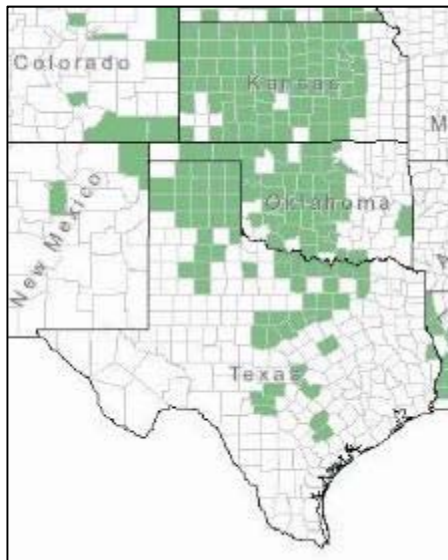
**Plant Height:** 2-3 ft.

**Blooms/Fruits:** May-July

**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.

**Pollinator Value:** Blacksamson 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.







Seedlings



Full flowering



Early flower



Mature flower head



Leaf arrangement



Close-up of leaf



Habit of black samson Echinacea at

# Blue Mistflower (*Conoclinium coelestinum*)

**Aster Family**

**Other Common Names:** blue boneset, wild ageratum

**Scientific Name:** *Conoclinium coelestinum* (L.) DC.

**Plant Symbol:** COCO13

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 3 feet

**Blooms/Fruits:** July–November

**Distinguishing Characteristics:** Clusters of fluffy blue, blue-violet, or rosy-violet flower heads, rarely white; stems usually with short curly hairs; leaves fairly wide in shape, triangular or rounded; leaves opposite with margins toothed or scalloped. Sometimes sprawls over other vegetation.

**Pollinator Value:** Blue mistflower is a valuable nectar source, favored by many bees and butterflies. Male queen butterflies, another species of milkweed butterfly similar to the monarch, collect alkaloids from the nectar of these flowers to use in their courtship of females. Males can be seen nectaring in huge aggregations on these plants.

**Habitat:** Streambanks, wet meadows, low woods, floodplains, ditches, and disturbed sites. May become weedy.

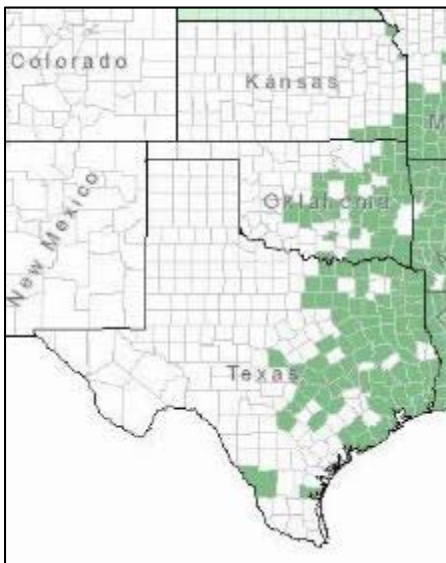


Photo: Mike



Early flower development



Flowering/close-up of flowers



Stem and leaf characteristics

# 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 x 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 ft.

**Blooms/Fruits:** May–June

**Duration:** Perennial, herbaceous

**Pollinator Value:** Visited by a diversity of bees (including honeybees and bumblebees), 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, and rocky calcareous soils.

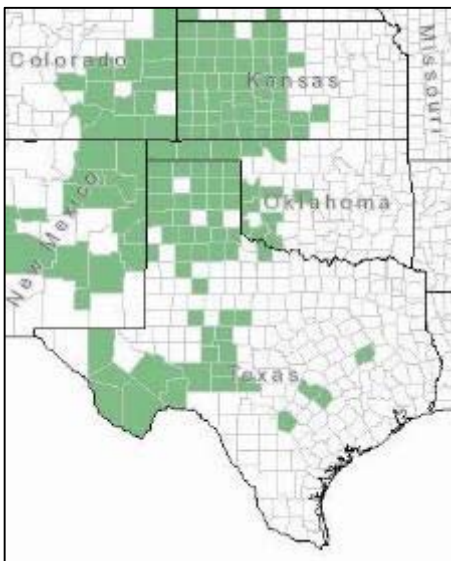




Photo: Mike Haddock

Full flowering/leaf arrangement



Photo: Pam Williams, Lady Bird Johnson Wildflower



Photo: Pam Williams, Lady Bird Johnson Wildflower

Foliage and fruit

# Butterfly Milkweed (*Asclepias tuberosa*)

Milkweed Family

**Other Common Names:** butterfly weed, orange milkweed

**Scientific Name:** *Asclepias tuberosa* L.

**Plant Symbol:** ASTU

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 2.5 ft.

**Blooms/Fruits:** May–October

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

**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 rarely rocky limestone soils.

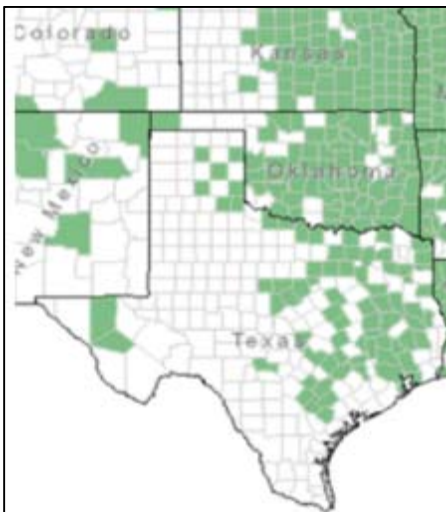


Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center



Photo: Lady Bird Wildflower Center Staff

Seedling



Photo: Bruce Leander, Lady Bird Johnson Wildflower



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

Early flowering/close-up view of



Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center

Full flowering

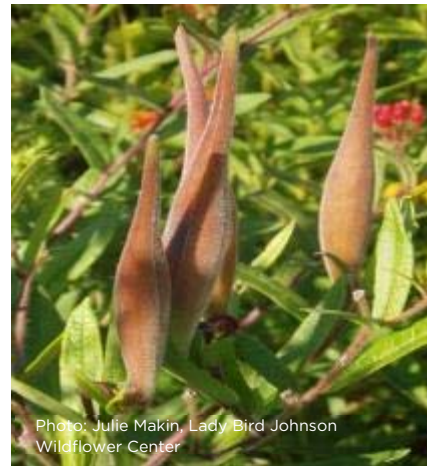


Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Fruit



Photo: Barbara Nuffer, Lady Bird Johnson Wildflower Center

Mature fruit with seed

# Button Eryngo (*Eryngium yuccifolium*)

Carrot Family

**Other Common Names:** bristle-leaf eryngo, button snakeroot, rattlesnake master

**Scientific Name:** *Eryngium yuccifolium* Michx.

**Plant Symbol:** ERYU

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 3.5 ft.

**Blooms/Fruits:** May- August

**Distinguishing characteristics:** Tall, erect, flowering stem with a basal rosette of linear, 2-3 ft. long leaves, leaves reduced up the flowering stem; leaves slightly toothed along the margin and are monocot in appearance with parallel veined (resembling *Yucca*); flowers grayish-white in compact, round, spiny heads.

**Pollinator Value:** Rattlesnake master is of special value to beneficial insects, including wasps and syrphid flies. It is the only larval host plant for the rare Rattlesnake master borer moth. Rattlesnake master nectar is also attractive to many bees and butterflies.

**Habitat:** Prairies and open rocky woodlands.

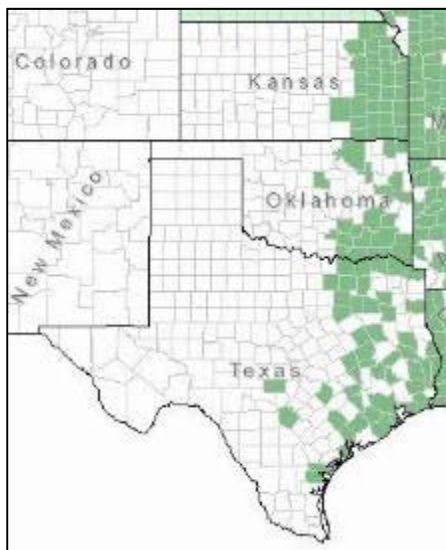


Photo: Carolyn Fannon Lady Bird Johnson Wildflower Center





Photo: USDA-NRCS



Photo: USDA-NRCS

Seedling (note the toothed leaf margin)



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Mature



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Flowering/close-up of flower



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center



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

Early vegetative growth



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Toothed leaf

# 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.

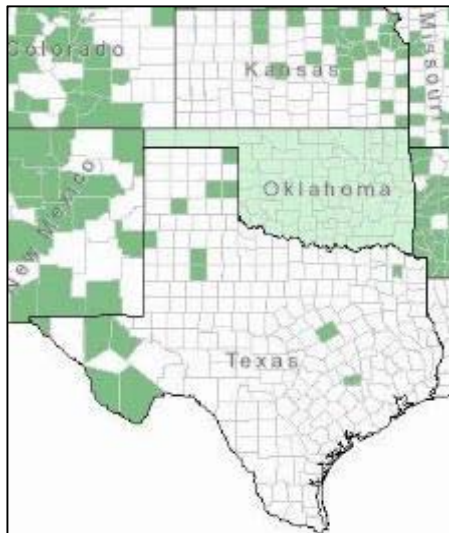
**Plant Height:** 3-6+ ft., erect (often with numerous stems) **Blooms/Fruits:** August–October

**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.





Full flowering/close-up of flowers



Stem and leaf arrangement; close up of underside of leaf

# 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 ft., 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.

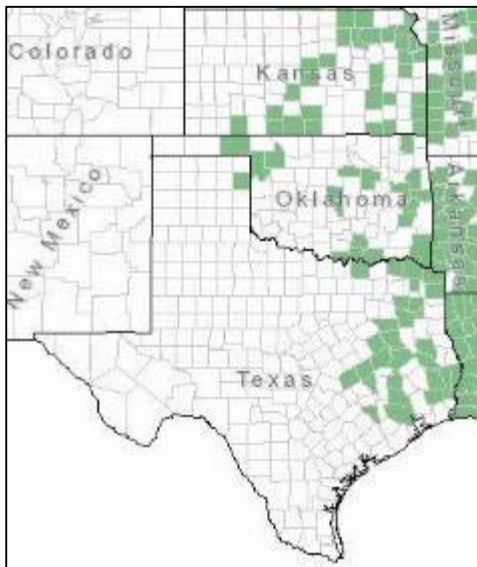


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Photo: Sarah Linn, Lady Bird Johnson Wildflower Center



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



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Close-up of leaf arrangement



Photo: Sarah Linn, Lady Bird Johnson Wildflower Center

# Common Dittany (*Cunila origanoides*)

Mint family

**Other Common Names:** American dittany, Maryland stone-mist

**Scientific Name:** *Cunila origanoides* (L.) Britton

**Plant Symbol:** CUOR

**Duration:** Perennial

**Growth Habit:** Forb/herb; subshrub

**Plant Height:** 1-2 ft.

**Blooms/Fruits:** July–October

**Distinguishing characteristics:** Flowers in terminal or sometimes axillary clusters, purple to white in color, and the petals “two lipped” with 2 petals above and 3 petals below; leaves are resin-dotted and aromatic when crushed; leaves are widely spear shaped with rounded to heart-shaped bases and no leaf stalks. May have single or multiple woody stems.

**Pollinator Value:** This flower supports migrating monarchs during the fall migration. It may attract other butterflies.

**Habitat:** Rocky, moist, wooded hillsides and stream banks.

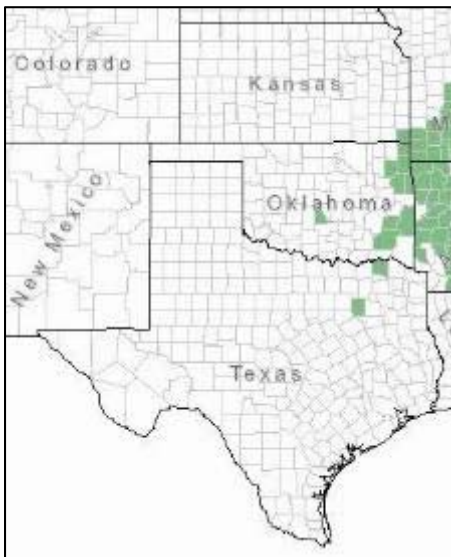


Photo: Derick Poindexter©

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# Common Milkweed (*Asclepias syriaca*)

Milkweed Family

Other Common Names: none

Scientific Name: *Asclepias syriaca* L.

Plant Symbol: ASSY

Duration: Perennial

Growth Habit: Forb/herb

Plant Height: 2-5 ft.

Blooms/Fruits: May-August

**Distinguishing characteristics:** Flowers in circular clusters from the leaf axils on the upper portion of the plant, each flower on a long stalk; petals reflexed, lavender or pink but may be greenish or white with pink highlights; leaves are in pairs (opposite) along the stem, lance-shaped to elliptical; plants rhizomatous, usually unbranched.

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

**Habitat:** Roadsides, disturbed areas, field borders, bottomland & upland prairies, pastures, and old fields.

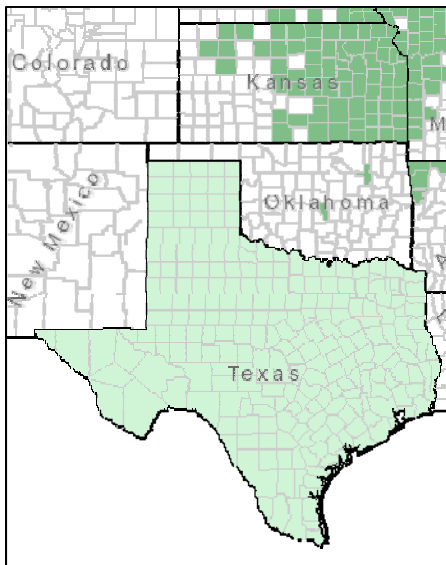


Photo: Kelly Gill, Xerces Society





Photo: Kelly Gill, Xerces Society



Photo: Kelly Gill, Xerces Society

Flowering/close-up of flowers



Photo: Mike Haddock, Kansas



Photo: Kelly Gill, Xerces Society

Stem and leaf arrangement

# Common Sunflower (*Helianthus annuus*)

Aster Family

**Other Common Names:** Kansas sunflower, mirasol, sunflower

**Scientific Name:** *Helianthus annuus* L.

**Plant Symbol:** HEAN3

**Family:** Asteraceae

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 1 - 10 ft., variable

**Blooms/Fruits:** July - October

**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.

**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.

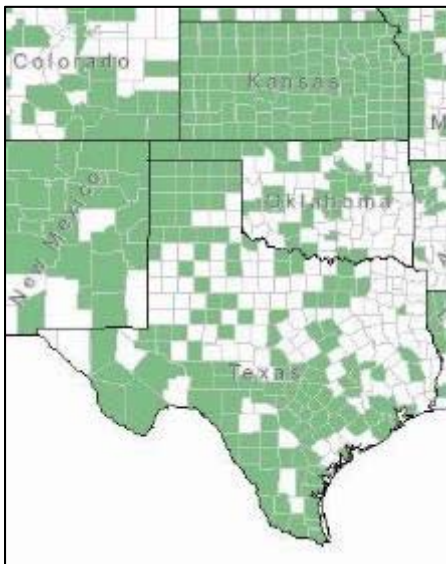


Photo: David Northington, Lady Bird Johnson Wildflower



Seedling



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



Photo: David Northington, Lady Bird Johnson Wildflower Center

Full flowering



Photo: Joseph Marcus I, Lady Bird Johnson Wildflower Center

Close-up of stem



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Mature plant

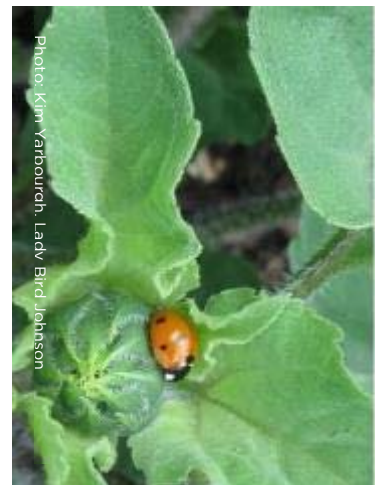


Photo: Kim Yarborough, Lady Bird Johnson

Developing flower bud

# Compassplant (*Silphium laciniatum*)

**Aster Family**

**Other Common Names:** none

**Scientific Name:** *Silphium laciniatum* L.

**Plant Symbol:** SILA3

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 3-6 ft.

**Blooms/Fruits:** July-September

**Distinguishing characteristics:** Leaves thick, leathery, deeply lobed to dissected; flowering heads yellow with dark centers; basal leaves long stemmed, the leaves reduced in size up the stem; basal leaves generally oriented in a north-south direction.

**Pollinator Value:** Compass plant is an excellent source of pollen & nectar. It is especially valuable to long-tongued bees. Monarchs are known to nectar on this plant.

**Habitat:** Glades, open prairie, openings in dry upland forests, and roadsides.

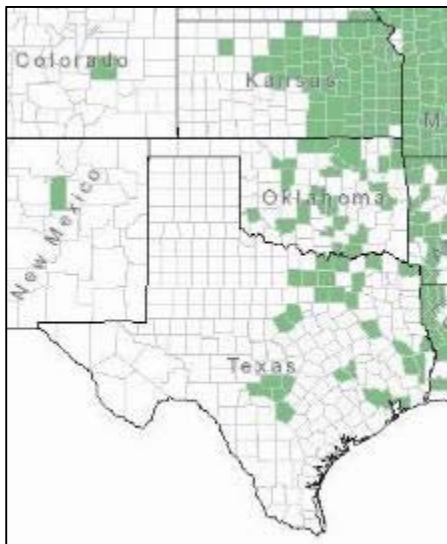


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



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

Close-up of flowers and unopened flower



Photo: Julie Makin, Lady Bird Johnson Wildflower Center



Photo: USDA-NRCS

Seedling



Photo: Paul Cox, Lady Bird Johnson Wildflower Center



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Leaf



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

# Cup Plant (*Silphium perfoliatum*)

Aster Family

**Other Common Names:** cup rosinweed

**Scientific Name:** *Silphium perfoliatum* L.

**Plant Symbol:** SIPE2

**Distinguishing characteristics:** Floral heads in loose, open inflorescences; rays yellow and the central disc yellow; leaves opposite on the stem and, except the basal leaves, characteristically have the leaf bases fused together with its opposite leaf making a “cup” around the stem and appearing as if the square stem is growing through the middle of the leaf, the leaves are thickened but not leathery.

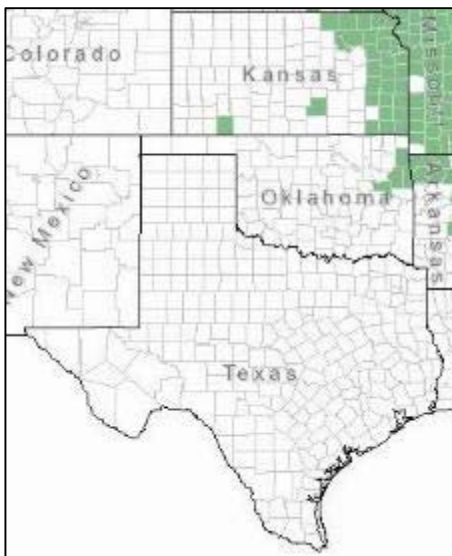
**Plant Height:** 3-7+ ft., erect (commonly in clusters)

**Blooms/Fruits:** July–September

**Duration:** Perennial, herbaceous (from rhizomes)

**Pollinator Value:** This flower provides nectar and pollen to bees and other beneficial insect. It also attracts butterflies.

**Habitat:** Bottomland forests, banks of rivers and streams, moist low ground, and ditches.





Full flowering/close-up of flowers and mature



Photo: John Hilty, Illinois Wildflowers



Photo: © 2009 Kathy Chayka



Photo: © 2009 Kathy Chayka

Leaf arrangement



Photo: © 2009 Kathy Chayka

Close-up of stem

# Dakota Mock Vervain (*Glandularia bipinnatifida*)

Verbena Family

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

**Scientific Name:** *Glandularia bipinnatifida* (Nutt.) Nutt.

**Plant Symbol:** GLBI2

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 2 ft.

**Blooms/Fruits:** March–October

**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.

**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.

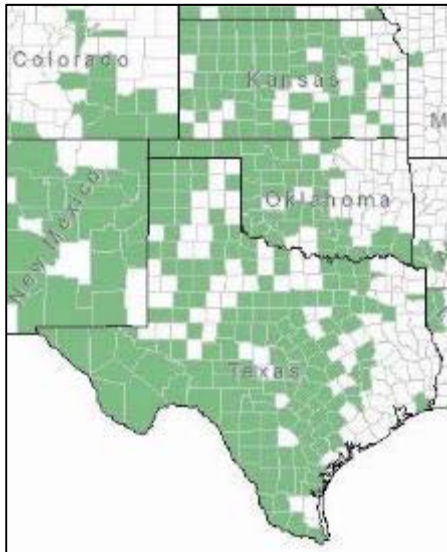


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center





Leaf arrangement



Mature

# Dotted Blazing Star (*Liatris punctata*)

## Aster Family

**Other Common Names:** blazing star, button snakeroot, dotted gayfeather, liatris, narrow-leaved gayfeather, Nebraska blazing star, prairie snakeroot, starwort.

**Scientific Name:** *Liatris punctata* Hook.

**Plant Symbol:** LIPU

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-3 ft.

**Blooms/Fruits:** August-October

**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.

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

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

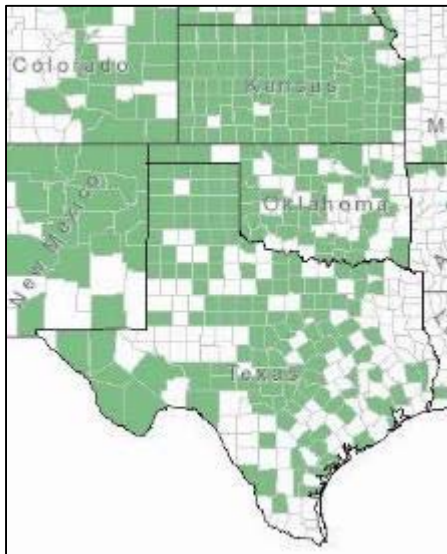


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Flower buds



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Seed maturation



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

Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Plants flowering/close view of flowers



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seed

# Downy Ragged Goldenrod (*Solidago petiolaris*)

**Aster Family**

**Other Common Names:** downy goldenrod

**Scientific Name:** *Solidago petiolaris* Aiton

**Plant Symbol:** SOPE

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 3-5 ft.

**Blooms/Fruits:** August-October

**Distinguishing characteristics:** Flowering heads yellow in a many branched inflorescence 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 more “showy” goldenrods in the region. Plants have slender rhizomes.

**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.

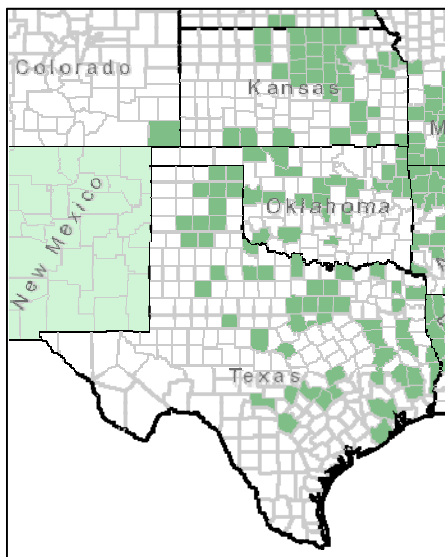




Photo: Mike Haddock

Flowering/close-up of flowers



Photo: Mike Haddock



Photo: Mike Haddock

Stem and leaf arrangement



Photo: Mike Haddock

Mature plant

# Entireleaf Indian Paintbrush (*Castilleja indivisa*)

Figwort Family

**Other Common Names:** Indian paintbrush, scarlet paintbrush, Texas paintbrush

**Scientific Name:** *Castilleja indivisa* Engelm.

**Plant Symbol:** CAIN13

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 6-16 in.

**Blooms/Fruits:** March-May

**Distinguishing characteristics:** Flowering heads (bracts) orange-red to red; leaves are linear and without a leaf stalk; leaf margins smooth (without teeth)

**Pollinator Value:** This plant is a good nectar source for butterflies and hummingbirds.

**Habitat:** Sandy open woods, prairies, meadows, pastures, savannahs, woodlands edge, openings, and roadsides.



Photo: Randy Heisch, Lady Bird Johnson Wildflower Center



Seedling Photos: Staff, Lady Bird Johnson



Seedlings



Photo: Plant Resource Center, Univ. of

Full flowering



Photo: Randy Matthews, Lady Bird Johnson



Photo: Randy Heisch, Lady Bird Johnson Wildflower

Close-up of flower showing colored bracts/ stem

# Eastern Purple Coneflower (*Echinacea purpurea*)

## Aster Family

**Other Common Names:** echinacea, snakeroot, Kansas snakeroot, narrow-leaved purple coneflower, scurvy root, Indian head, comb flower, black susans, and hedgehog

**Scientific Name:** *Echinacea purpurea* (L) Moench

**Plant Symbol:** ECPU

**Distinguishing characteristics:** Flowering heads with reddish-purple to pink rays (2-3" long) which are generally reflexed slightly at flowering; central disk conical with reddish-orange, blunt tipped spines and a dark center; leaves largest basally and reduced in size up the stem and with coarsely saw-toothed margins. The only *Echinacea* in our range with leaves 3-5 in. wide and with rounded or heart-shaped leaf bases, and fibrous roots.

**Plant Height:** 2-4 ft., erect

**Blooms/Fruits:** May-October

**Duration:** Perennial, herbaceous (with fibrous roots)

**Pollinator Value:** The flower attracts butterflies and native bees.

**Habitat:** rocky prairies, open wooded, thickets, often near waterways

**Note:** Eastern purple coneflower is a common horticultural plant with several cultivars, which do escape into natural environments. These cultivars will appear somewhat different in size and flower color compared to native individuals.



Photo: Alan Cressler, Lady Bird Johnson Wildflower Center





Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: USDA-

Photo: USDA-NRCS

Seedling



Photo: Doug Sherman, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flower and mature seedhead



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and leaf



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seed

# Engelmann's Daisy (*Engelmannia peristenia*)

Aster Family

**Other Common Names:** cutleaf 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 ft.

**Blooms/Fruits:** April–November

**Duration:** Perennial, herbaceous, and the basal rosette can be persistent

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

**Habitat:** Prairies, open sites, and roadsides.

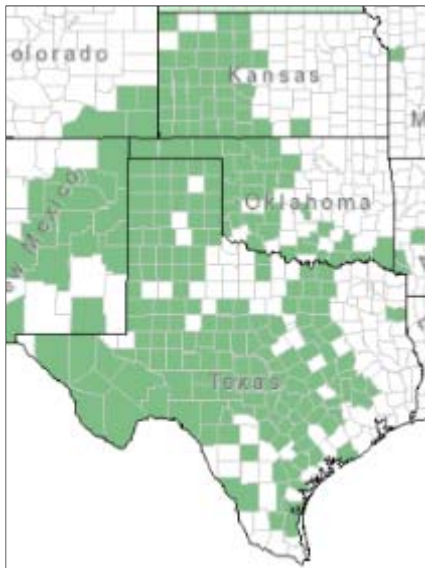




Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



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



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Foliage

# Fringed Twinevine (*Funastrum cynanchoides*)

Milkweed Family

**Other Common Names:** climbing milkweed vine, twinevine

**Scientific Name:** *Funastrum cynanchoides* (Decne.) Schltr. **Plant Symbol:** FUCY

**Duration:** Perennial

**Growth Habit:** Forb/herb; vine

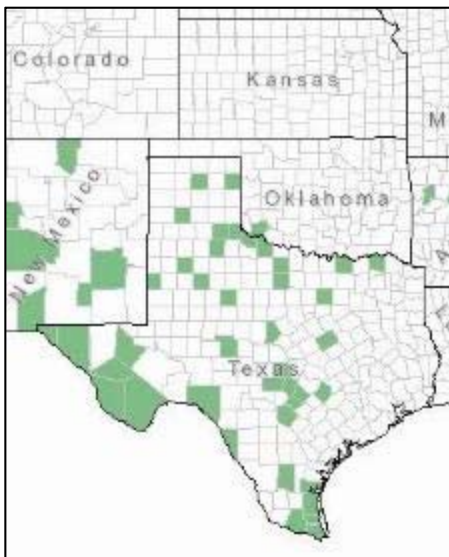
**Plant Height:** climbing vine, up to 10 ft.

**Blooms/Fruits:** April–August

**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.

**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.



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# Golden Crownbeard (*Verbesina encelioides*)

Aster Family

**Other Common Names:** butter daisy, cowpen daisy, feverweed

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

**Duration:** Annual

**Growth Habit:** Forb/herb

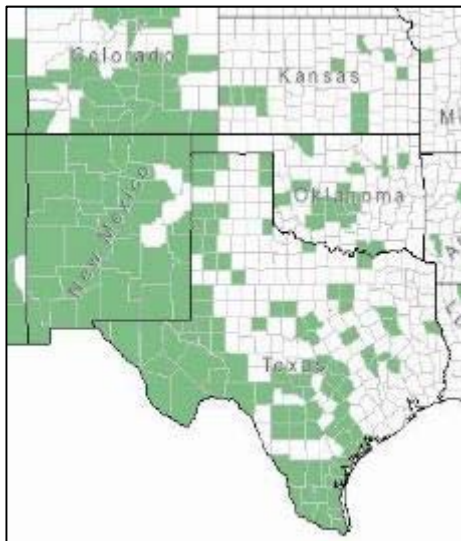
**Plant Height:** up to 2.5 ft.

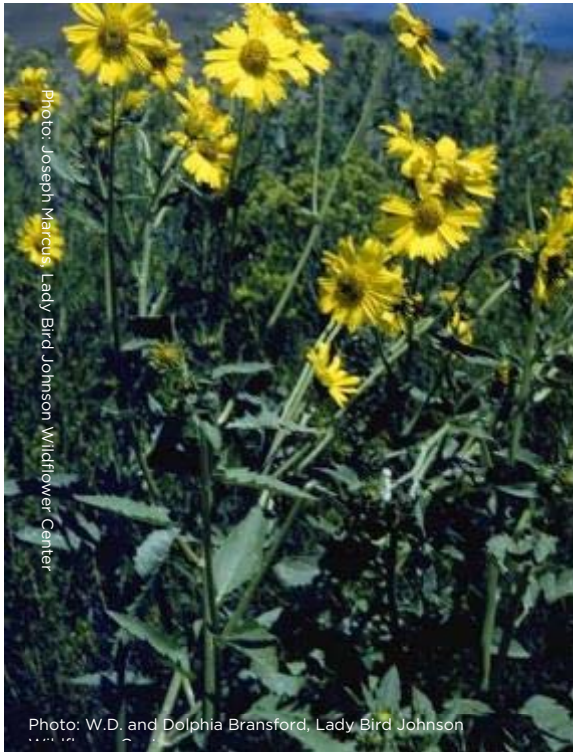
**Blooms/Fruits:** April–October

**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.

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

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





Leaf

Flowering



Seed



Lobed at leaf base

## Gray Goldenrod (*Solidago nemoralis*)

### Aster Family

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

**Scientific Name:** *Solidago nemoralis* Aiton

**Plant Symbol:** SONE

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 0.5–2.5 ft.

**Blooms/Fruits:** July–November

**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.

**Pollinator Value:** This flower is very popular with bees and wasps. It is also 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*, *Euthamia*, *Oligoneuron*, and *Solidago*) 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.

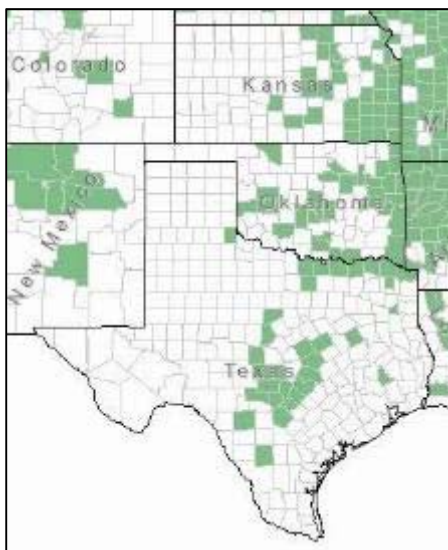


Photo: F. W. Smith, Lady Bird Johnson Wildflower Center





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

Unopened flowers



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center



Photo: Ray Mathews, Lady Bird Johnson Wildflower Center

Close-up of Flowers



Photo: Easy living Native Perennial Wildflowers

Mature plant



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

Full bloom



Photo: USDA-ARS

Seed

# Green Antelopehorn (*Asclepias viridis*)

## Milkweed Family

**Other Common Names:** green milkweed, Ozark milkweed, spider milkweed

**Scientific Name:** *Asclepias viridis* Walter

**Plant Symbol:** ASVI2

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-2 ft.

**Blooms/Fruits:** April-September

**Distinguishing characteristics:** Flowers pale green with the petals spreading like a typical flower; leaves alternate or sub-opposite on the stem short leaf stalk; flowers in loose axillary rounded clusters.

**Pollinator Value:** Larval host plant for monarch butterfly. This plant is very attractive to butterflies and bees because it is a high quality nectar source.

**Habitat:** Upland prairies, on calcareous substrates, roadsides, & open ground. Eastern half of the Great Plains.

**Note:** This species is very similar to spider milkweed (*A. asperula*), but has slightly wider petals that have a blunt tip; the inflorescence is not as tightly packed with flowers; and the stem is fairly erect.

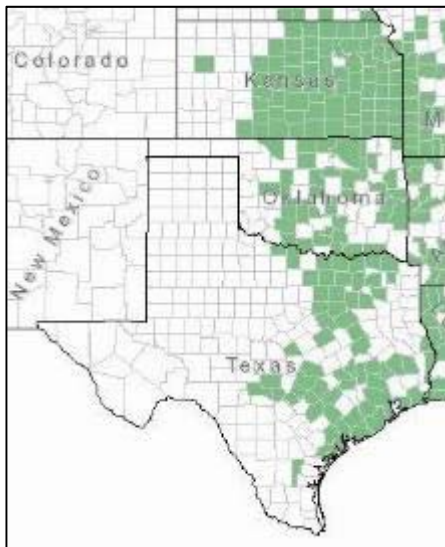


Photo: Sandy Smith, Lady Bird Johnson Wildflower Center



Photo: Alan Cressler, Lady Bird Johnson



Photo: Sandy Smith, Lady Bird Johnson Wildflower

Full Flowering/close-up of flowers/flower



Photo: Steven Schwartzman Lady Bird Johnson Wildflower Center



Photo: Marilyn McBroom Knight, Lady Bird Johnson Wildflower

Leaf and stem



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Fruit



Photo: Carolyn Fannon, Lady Bird Johnson

Mature fruit and seed

## Hairy Wedelia (*Wedelia acapulcensis*)

### Aster Family

**Other Common Names:** orange zexmania, zexmenia, wedelia, Texas creeping-oxeye, orange daisy

**Scientific Name:** *Wedelia acapulcensis* Kunth var. *hispida* (Kunth) Strother **Plant Symbol:** WEAC

**Distinguishing characteristics:** Stems woody at the base and herbaceous throughout the leafy parts, covered with stiff, appressed hairs that are rough to the touch; leaves are opposite, lack a leaf stem, are narrowly egg-shaped, and have a coarsely toothed to slightly lobed margin; flowering heads daisy-like, on long stems, occur singly or in small groups of 2-3, and with yellow to orange rays and centers.

**Plant Height:** 2-3 ft.

**Blooms/Fruits:** April–November

**Duration:** Perennial, shrub/subshrub

**Pollinator Value:** Visited by honeybees, native bees, and butterflies.

**Habitat:** Igneous or limestone derived soils, thorn woodlands, desert scrublands.

**Note:** This species is only represented by one variety in our flora: *W. acapulcensis* var. *hispida* (Kunth) Strother. Symbol: WEACH. An older scientific name (synonym) for hairy widelia is *W. texana* and is found in some floras.





Photo: USDA-NRCS

Seed



Photo: USDA-NRCS

Seedlings



Photo: USDA-NRCS



Photo: USDA-NRCS

Full flowering and close-up of blooms

# 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.

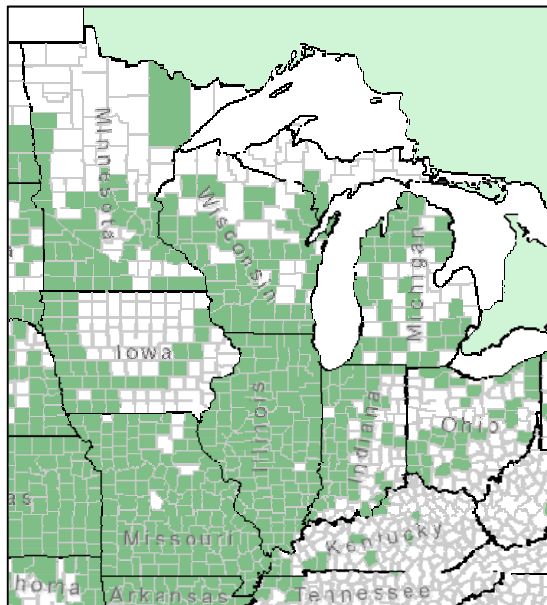
**Plant Height:** 1-4 ft., erect to ascending

**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.





Full flowering/close-up of blooms



Photo: Mike Haddock

Close-up of stem and leaf

Mature plant

# Late flowering Thoroughwort (*Eupatorium serotinum*)

Aster Family

**Other Common Names:** fall boneset, late eupatorium, white boneset

**Scientific Name:** *Eupatorium serotinum* Michx.

**Plant Symbol:** EUSE2

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 2-5 ft.

**Blooms/Fruits:** August-October

**Distinguishing characteristics:** Flower heads as small, white, powder-puffs in many headed, flat-topped inflorescences; leaves mostly opposite except towards the top, broadly spear-shaped with tapering tips.

**Pollinator Value:** Late flowering thoroughwort is attractive to a variety of insects, including butterflies and bees.

**Habitat:** Open moist woods in bottomlands, disturbed sites.

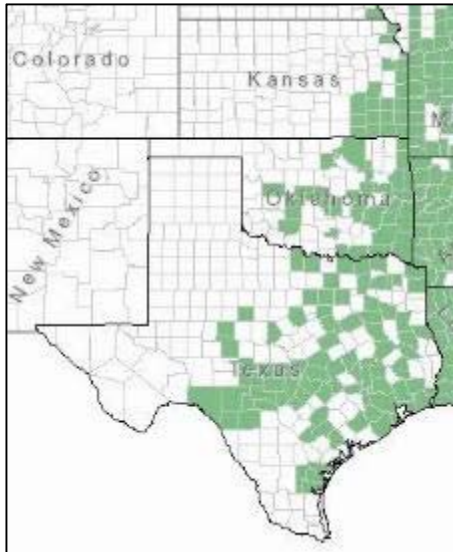


Photo: Robert Stone, Lady Bird Johnson Wildflower Center





Flowering/close-up of flower heads



Both photos showing stem and leaf arrangement

# Leadplant (*Amorpha canescens*)

Pea Family

**Other Common Names:** leadplant 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 leadplant 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 ft., 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.

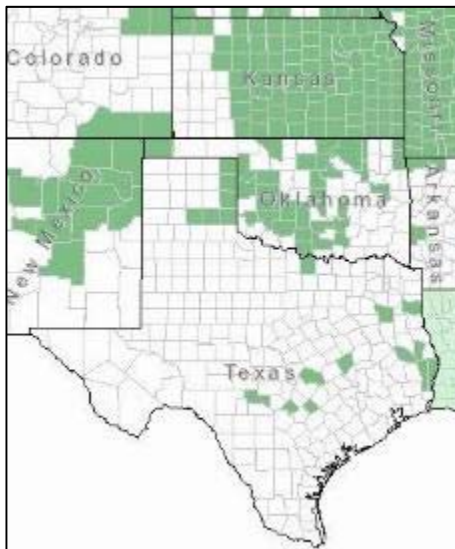


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



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

Full flowering/close-up of blooms



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



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Mature flower head



Photo: Julie Makin, Lady Bird Johnson Wildflower Center



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center

Close-up of leaflets and vegetative growth

# Leavenworth's Eryngo (*Eryngium leavenworthii*)

Carrot Family

**Other Common Names:** eryngo, false purple thistle

**Scientific Name:** *Eryngium leavenworthii* Torr. & A. Gray **Plant Symbol:** ERLE11

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 1-3 ft.

**Blooms/Fruits:** July–October

**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.

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

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

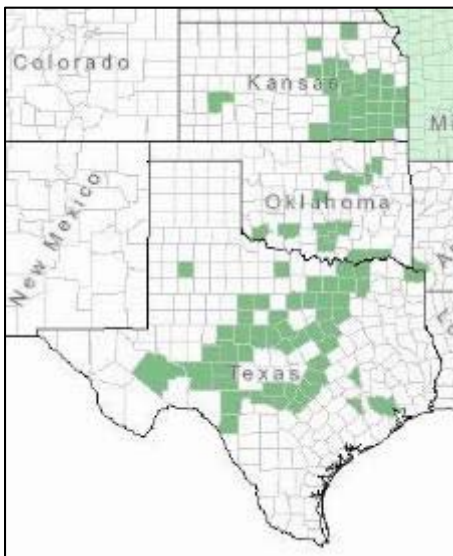


Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center



Photo: Marcus Joseph, Lady Bird Johnson



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full Flowering/Close-up of inflorescence



Photo: Janice Lynn, Lady Bird Johnson



Photo: Janice Lynn, Lady Bird Johnson

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.  
 MOCI

**Plant Symbol:**

**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 1/2 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 ft.

**Blooms/Fruits:** May-July

**Duration:** Annual, herbaceous

**Pollinator Value:** Known to be visited by bumblebees and butterflies.

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

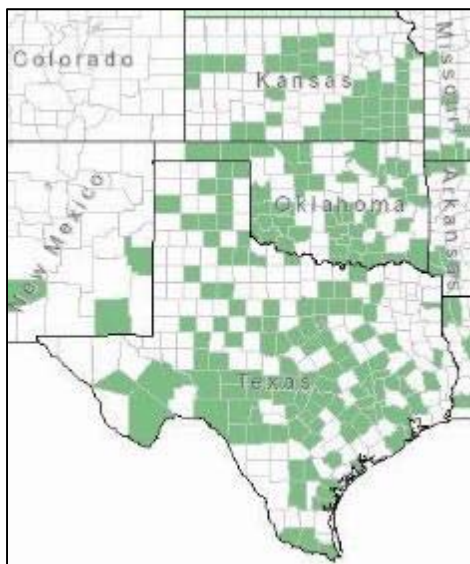




Photo: Wildflower Staff, Lady Bird Johnson



Photo: Wildflower Staff, Lady Bird Johnson

Seedlings



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flowers



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Close-up of foliage

# Maximillian Sunflower (*Helianthus maximiliani*)

Aster Family

Other Common Names: Max sunflower

Scientific Name: *Helianthus maximiliani* Schrad.

Plant Symbol: HEMA2

Duration: Perennial

Growth Habit: Forb/herb

Plant Height: 3-10 ft.

Blooms/Fruits: August-November

**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.

**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 to many soil types, from sands to clays; favors good internal drainage and sunny locations.

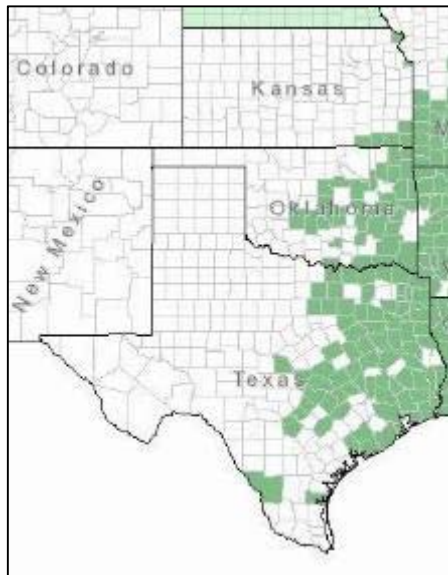


Photo: USDA-NRCS





Photo: Lady Bird Johnson Wildflower Center Staff

Seedling



Photo: USDA-

Photo: USDA-NRCS

Mature plant



Photo: USDA-

Photo: USDA-

Full flowering/close-up of flower



Photo: USDA-NRCS

Late vegetative

# New England Aster (*Symphotrichum novae-angliae*)

Aster Family

**Other Common Names:** none

**Scientific Name:** *Symphotrichum novae-angliae* (L.) G.L. Nesom  
 SYNO2

**Plant Symbol:**

**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 ft., erect

**Blooms/Fruits:** July–October

**Duration:** Perennial, herbaceous (with woody rootstock and rhizomes)

**Pollinator Value:** The 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: Steve Eggers ©

Full flowering/close-up of blooms



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



Photo: USDA-NRCS



Photo: USDA-NRCS

Stem and leaf arrangement



Photo: USDA-NRCS

Seedlings

# 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 " in. long x " 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.

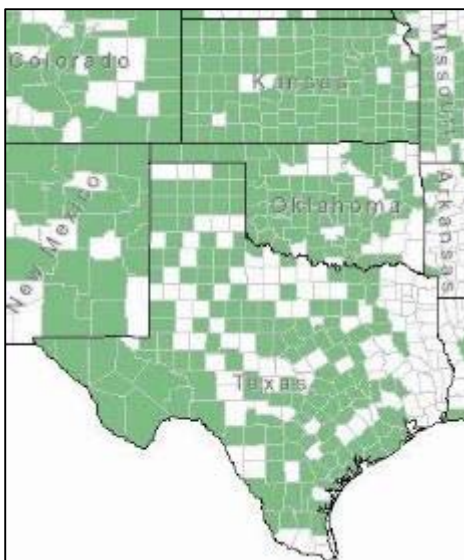
**Plant Height:** 0.5-1.5 ft.

**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.





Full flowering/close-up of flowers



Leaf/foliage



Seed

# Pale Purple Coneflower (*Echinacea pallida*)

## Aster Family

**Other Common Names:** pale echinacea, pale coneflower

**Scientific Name:** *Echinacea pallida* (Nutt.) Nutt.

**Plant Symbol:** ECPA

**Distinguishing characteristics:** Flower heads appearing daisy-like with pale pink, narrow, obviously drooping rays and with a dark purple to pink cone-shaped center; leaves much longer than broad, linear to widest in the middle, and with short, stiff hairs on the surfaces thus feeling raspy to the touch; stems with short stiff hairs that may be swollen (pustular) at the base of the hair.

**Plant Height:** 3-5 ft., erect

**Blooms/Fruits:** May-June

**Duration:** Perennial, herbaceous

**Pollinator Value:** This flower attracts butterflies and native bees.

**Habitat:** Upland prairies, glades, savannas, and other dry open sites.

**Note:** This species is similar to black Samson (*E. angustifolia*), but pale purple coneflower has white pollen while black Samson's pollen is yellow.

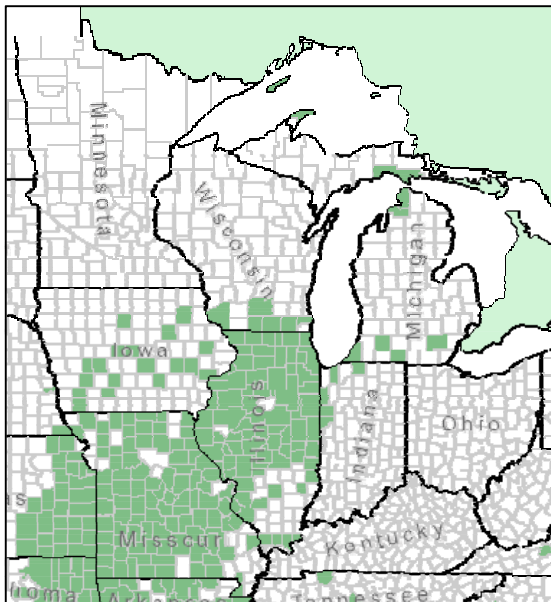




Photo: Johnny Johnson, Lady Bird Johnson Wildflower Center



Photo: Johnny Johnson, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



© K. R. Robertson  
Illinois Natural History Survey

Stem and leaf



© K. R. Robertson  
Illinois Natural History Survey



© K. R. Robertson  
Illinois Natural History Survey

Mature coneflower



© K. R. Robertson  
Illinois Natural History Survey

# Palmleaf Thoroughwort (*Conoclinium greggii*)

## Aster Family

**Other Common Names:** Gregg’s mistflower, purple palm-leaf eupatorium, purple palm-leaf mistflower

**Scientific Name:** *Conoclinium greggii* (A. Gray) Small

**Plant Symbol:** COGR10

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 2 ft.

**Blooms/Fruits:** March–November

**Distinguishing characteristics:** Flowering heads in small 1-2 inch clusters of blue to purplish powder-puffs; leaves rounded or delta-shape in overall form but palmately deeply lobed or dissected; stem bases may be woody.

**Pollinator Value:** Very attractive to butterflies, especially queen and monarch butterflies. Its blooms coincide with the fall monarch migration.

**Habitat:** Waterways, depressions, ditches, stream beds and overflow areas, gravelly calcareous soil.

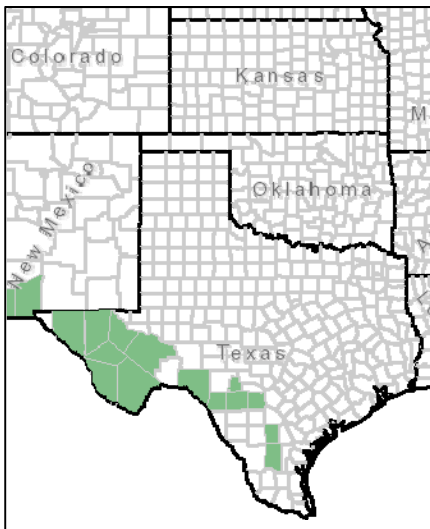


Photo: Ray Mathew Lady Bird Johnson Wildflower





Photo: Lee Page Lady Bird Johnson Wildflower Center



Photo: Ray Mathews Lady Bird Johnson Wildflower



Photo: Bruce Leander Lady Bird Johnson Wildflower Center

Flowering/close-up of flowers



Photo: Nancy Woolly, Lady Bird Johnson Wildflower

Full flowering and leaf arrangement



Photo: Bruce Leander Lady Bird Johnson Wildflower Center

Seed

# Pennsylvania Smartweed (*Polygonum pensylvanicum*)

## Smartweed Family

**Other Common Names:** common smartweed, pink smartweed

**Scientific Name:** *Polygonum pensylvanicum* (L.)      **Plant Symbol:** POPE2

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 0.5–6 ft., variable

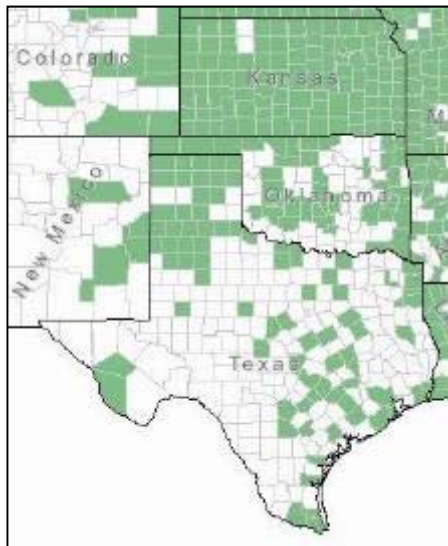
**Blooms/Fruits:** May–November

**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.

**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.





© Robin R. Buckallew

Leaf, stem, and close-up of flower



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



Photo: © Steve Eggers, USACE

Seed

# Pinkscale Blazing Star (*Liatris elegans*)

**Aster Family**

**Other Common Names:** blazing star, handsome blazing star

**Scientific Name:** *Liatris elegans* (Walt.) Michx.

**Plant Symbol:** LIEL

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 2-4 ft.

**Blooms/Fruits:** August-October

**Distinguishing characteristics:** Flowering heads crowded together on an elongate, terminal, spike-like inflorescence, pink, lavender, or light purple, but some varieties can be white or cream colored; characteristically the bracts under the flower heads are longer than the flowering head and petal-like; leaves widely lance shaped, with one main vein; plants have corm rootstock.

**Pollinator Value:** Like most other *Liatris* spp., this plant is very attractive to butterflies.

**Habitat:** Sandy soils, open woods, sandy clays, pine-hardwood forests.

**Note:** There are three botanical varieties of this species occurring within the Southern Great Plains.

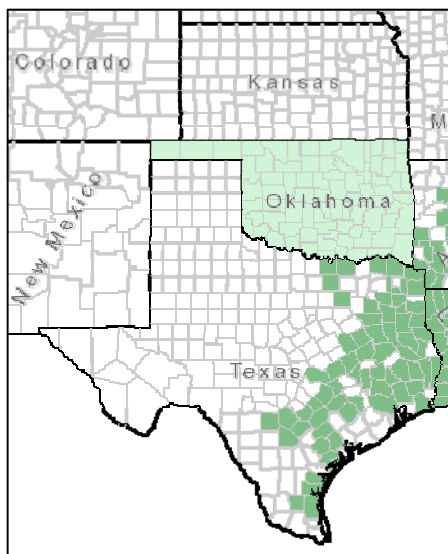


Photo: Harry Cliffe, Lady Bird Johnson Wildflower Center



Photo: Campbell and Lynn Loughmiller Lady Bird Johnson Wildflower

Flowering/close-up of flowers



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



Photo: USDA-NRCS

Seedling



Photo: Harry Cliffe, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement

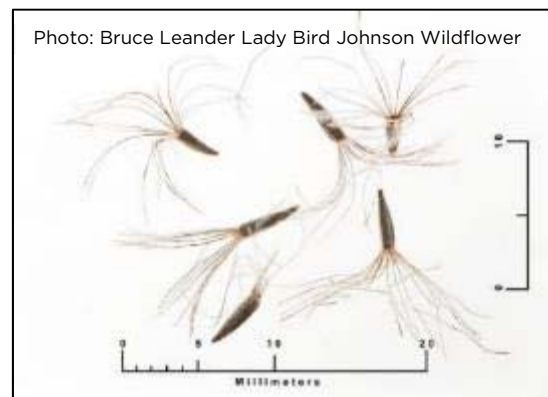


Photo: Bruce Leander Lady Bird Johnson Wildflower

Seed

# Prairie Blazing Star (*Liatris pycnostachya*)

## Aster Family

**Other Common Names:** prairie gayfeather, prairie liatris, Kansas blazing star, Kansas gayfeather, Kansas liatris, cat-tail blazing star, cat-tail gayfeather, cat-tail liatris, hairy button-snakeroot

**Scientific Name:** *Liatris pycnostachya* Michx.

**Plant Symbol:** LIPY

**Distinguishing characteristics:** Flowering heads purplish-blue to lavender powder-puffs and tightly clustered on an elongate inflorescence (spike) that may be half the length of the entire plant; flowering occurs from the top of the inflorescence first and then downward as the season progresses; leaves crowded on the stem and linear up to 6 in. long towards the base, but shorter upward.

**Plant Height:** 2-5 ft., erect

**Blooms/Fruits:** July–October

**Duration:** Perennial, herbaceous (from a rounded corm)

**Pollinator Value:** Bees and butterflies are attracted to the flowers of this late summer through fall nectar source.

**Habitat:** Upland prairies, openings in mesic to upland forests, stream and ditch banks, fencerows, and pastures.





Full flowering/close-up of flowers



Mature plant



Stem and leaf

# Prairie Ironweed (*Vernonia fasciculata*)

Aster Family

Other Common Names:

**Scientific Name:** *Vernonia fasciculata* Michx.

**Plant Symbol:** VEFA2

**Distinguishing characteristics:** Flower heads reddish-purple to purple in a much branched inflorescence; leaves are alternate on the stem and mostly attached directly without a leaf stem, shape is widely lance-shaped and tapering at both ends, the undersurface has small, indented glands; the dark green leaves with the vivid purple flowers makes it easy to identify.

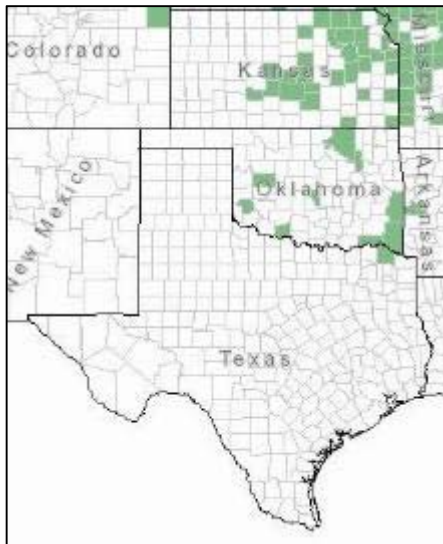
**Plant Height:** 2-4 ft., erect

**Blooms/Fruits:** July–September

**Duration:** Perennial, herbaceous (from rhizomes)

**Pollinator Value:** This flower attracts bees and butterflies. It supports an oligolege bee with its pollen.

**Habitat:** Bottomlands, ditches, low prairies, marshes, fens, and low fields.







Full flowering/close-up of flowers and mature



Photo: John Hilty, Illinois Wildflowers

Close-up of leaf/stem and leaf



# Prairie Milkweed (*Asclepias sullivantii*)

## Milkweed Family

**Other Common Names:** smooth milkweed

**Scientific Name:** *Asclepias sullivantii* Engelm. Ex A. Gray

**Plant Symbol:** ASSU3

**Distinguishing characteristics:** Inflorescences 15–40 flowered, in roundish clusters from the axis of the upper leaves; flowers borne on 2–3 in. stalks, pinkish-rose to purple colored and reflexed; leaves opposite one another and attached directly to the stem without leaf stalks, broadly spear-shaped, and spreading but with the ends often ascending.

**Plant Height:** 2–4 ft., erect

**Blooms/Fruits:** June–August

**Duration:** Perennial, herbaceous (with deep, fleshy rhizomes)

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

**Habitat:** Sandy, loamy, and rocky calcareous prairie soils and roadsides.

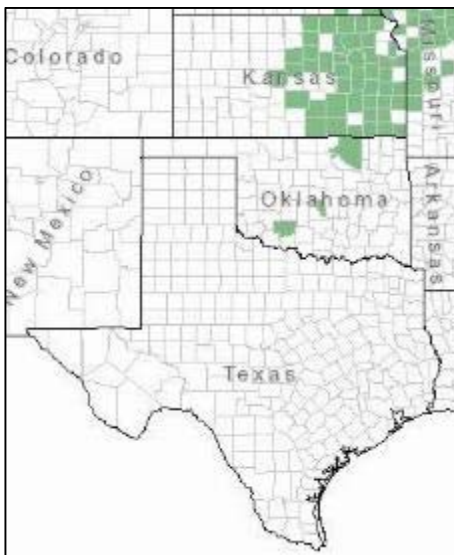


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Photo: Sally and Andy Wasowski, Lady Bird Johnson

Full flowering/close-up of blooms



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



Photo: Larry Lamb, Lady Bird Johnson Wildflower Center

Leaf arrangement

# 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

**Duration:** Perennial

**Growth Habit:** Forb/herb; subshrub

**Plant Height:** 2-3 ft.

**Blooms/Fruits:** May-September

**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.

**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.

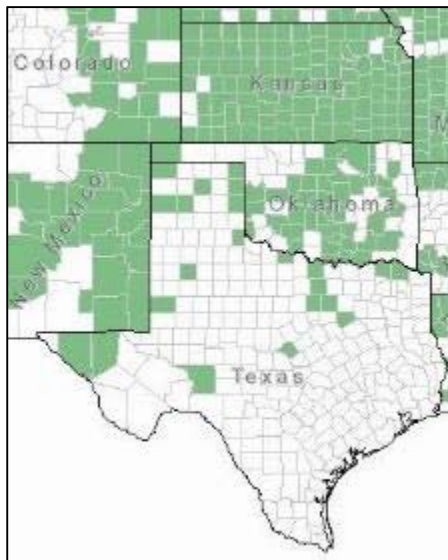


Photo: R.W. Smith, Lady Bird Johnson Wildflower Center



Seedlings



Flowering



Leaf



Mature

# Roughstem Rosinweed (*Silphium radula*)

Aster Family

Other Common Names: none

Scientific Name: *Silphium radula* Nutt.

Plant Symbol: SIRA2

Duration: Perennial

Growth Habit: Forb/herb

Plant Height: up to 6 ft.

Blooms/Fruits: June–August

**Distinguishing characteristics:** Flower heads borne singly or a few closely crowded on elongate stalks; the flowering stems very rough/raspy to the touch from very short, stiff hairs; flowering heads with yellow and with yellow and brown mottled centers; leaf are generally opposite without a leaf stalk and margins that are smooth or with some teeth, not deeply dissected like other rosinweeds.

**Pollinator Value:** Roughstem rosinweed supplies nectar and pollen to many species of native bee and other pollinators.

**Habitat:** Prairies, open wooded sites, calcareous soils.

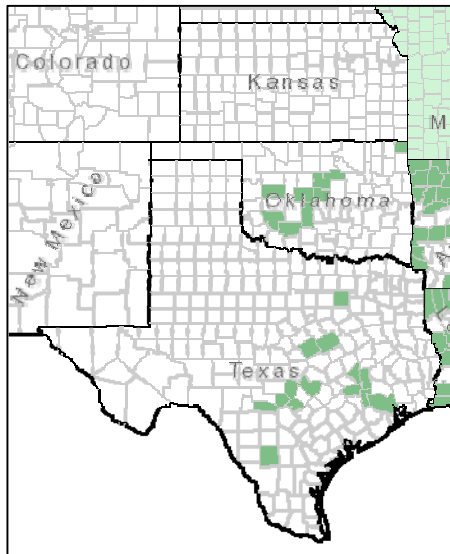


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flower



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Close-up of underside of flower



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and Leaf arrangement

# 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

**Duration:** Perennial

**Growth Habit:** Forb/herb; subshrub

**Plant Height:** 1-3 ft., multiple stems  
October

**Blooms/Fruits:** June-July, as late as

**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.

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

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

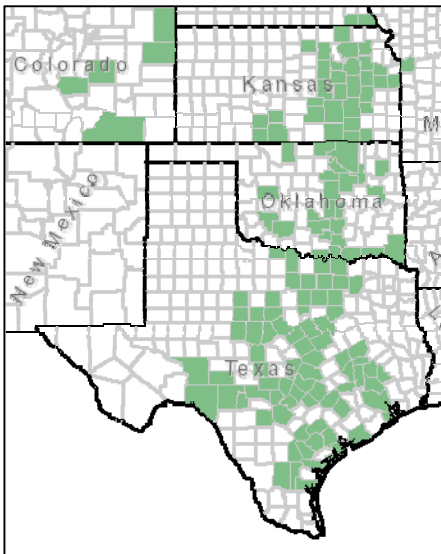


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center





Full flowering/close-up of flower/mature flowers



Leaf and stem

# Roundleaf Ragwort (*Packera obovata*)

**Aster Family**

**Other Common Names:** golden ragwort, roundleaf groundsel, squawweed

**Scientific Name:** *Packera obovata* (Muhl. ex Willd.) W.A. Weber & Á. Löve **Plant Symbol:** PAOB6

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-2 ft. in rosettes

**Blooms/Fruits:** April-June

**Distinguishing characteristics:** Flower heads with yellow rays and centers clustered towards the top of the flowering stalk; leaves in basal rosettes, rounded to widest towards the top and with a long leaf stalks often 1-2x the length of the leaf blade; basal leaves sometimes purple underneath; leaves are reduced in size up the flowering stem; leaf margins saw-toothed. Plants can be semi-evergreen to evergreen.

**Pollinator Value:** This flower provides early-season pollen and nectar resources to many insects, including native bees and butterflies. Roundleaf ragwort is a likely a valuable resource to migrating monarch butterflies.

**Habitat:** Rocky wooded hillsides, streambeds.

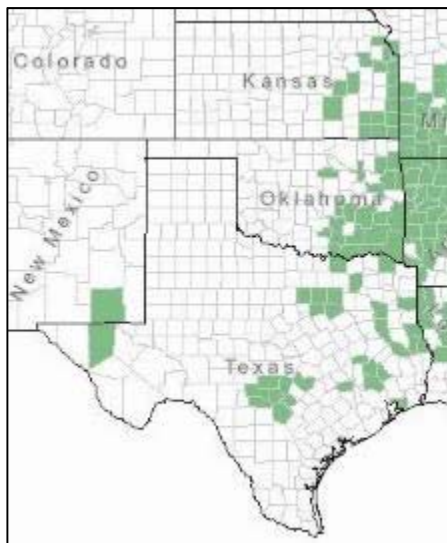


Photo: Joseph Marcus, Lady Bird Johnson



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Flowering/close-up of flowers



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Leaf shape/margin/arrangement



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Mature plant with seed

# Sawtooth Sunflower (*Helianthus grosseserratus*)

Aster Family

**Other Common Names:** hélíanthe à grosses dents

**Scientific Name:** *Helianthus grosseserratus* M. Martens

**Plant Symbol:** HEGR4

**Duration:** Perennial

**Growth Habit:** Forb/herb

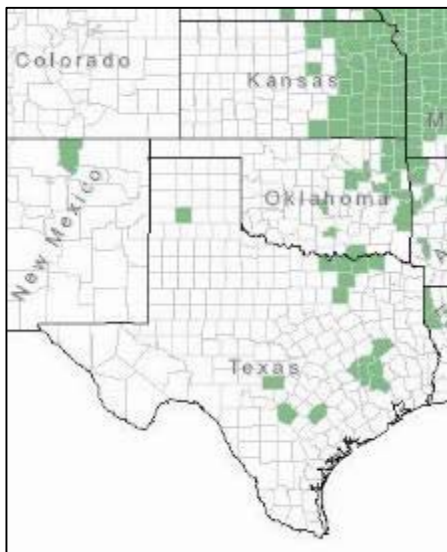
**Plant Height:** 3-12 ft.

**Blooms/Fruits:** August–November

**Distinguishing characteristics:** Flower heads with yellow rays and center; leaves are obviously sawtoothed on the margins, broadly lance shaped, and with 3 in. long leaf bases, upper leaf surface rough/raspy; stems arise from stout rhizomes and are hairless, but with a white waxy coating on the lower half of the stem.

**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.





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Full flowering and close-up of flowers



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



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Stem and close-up of leaf



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

Leaf arrangement

# Scaly Blazing Star (*Liatris squarrosa*)

Aster Family

**Other Common Names:** scaly gayfeather, scaly liatris

**Scientific Name:** *Liatris squarrosa* (L.) Michx.

**Plant Symbol:** LISQ

**Distinguishing characteristics:** Stems arising from a globose corm; leaves alternate, linear, 4 in. long x 1/3 in. wide, and attached directly to the stem without a leaf stem; flowering heads numerous along the inflorescence powder-puff like in appearance, purple, the individual flowering heads are not tightly clustered along the flowering stem like many other blazing stars.

**Plant Height:** 1-2 ft.

**Blooms/Fruits:** June–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** Relatively little is known, but already known to be visited frequently by the bee genera *Bombus*, *Lasioglossum* and *Halictus*, as well as large butterflies such as the monarch and regal fritillary. Like most *Liatris* spp., it is probably also visited frequently by numerous species of skipper butterflies.

**Habitat:** Dry forest openings, upland prairies, pastures, and roadsides

**Note:** The scientific name of Appalachian blazing star, *Liatris squarrolosa*, is spelled almost identically. Also, devil's bite, *Liatris scariosa*, has a very similar species name spelling. Use caution and verify the species intended for use.

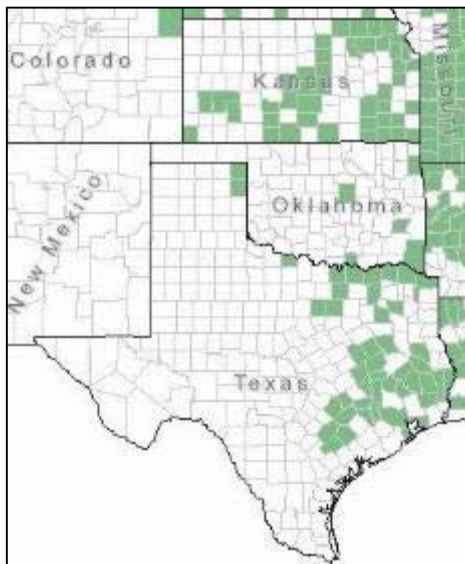


Photo: Alan Cressler, Lady Bird Johnson Wildflower Center



Photo: Edith Bettinger, Lady Bird Johnson Wildflower



Photo: Alan Cressler, Lady Bird Johnson Wildflower Cent

Full flowering/close-up of flowers



Photo: Mike Haddock



Photo: Cliff Harris, Lady Bird Johnson Wildflower

Leaf and leaf arrangement

# Shiny Goldenrod (*Oligoneuron nitidum*)

**Aster Family**

**Other Common Names:** none

**Scientific Name:** *Oligoneuron nitidum* (Torr. & A. Gray) Small

**Plant Symbol:** OLN1

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1.5–3 ft.

**Blooms/Fruits:** June–November

**Distinguishing characteristics:** Similar to other goldenrods, but inflorescence is flat-topped; flower heads small, with yellow rays and center; leaves linear to lance shaped, shiny on the surface, edges smooth or with a few teeth; a basal rosette of leaves usually present at flowering.

**Pollinator Value:** Goldenrods provide late-season forage to bees and butterflies.

**Habitat:** Prairies & open woodlands

**Note:** There are many plants commonly called goldenrods that belong to different plant genera (e.g., *Chrysoma*, *Euthamia*, *Oligoneuron*, and *Solidago*) and are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved (*Solidago*) or flat-topped (*Euthamia* & *Oligoneuron*). Shiny goldenrod may be found in older reference books as *Solidago nitida*.





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# Showy Goldenrod (*Solidago speciosa*)

Aster Family

**Other Common Names:** prairie goldenrod, showy-wand goldenrod

**Scientific Name:** *Solidago speciosa* Nutt.

**Plant Symbol:** SOSP2

**Distinguishing characteristics:** Flower heads yellow in branched inflorescences arising both terminal and from the axils of the upper leaves, ascending to spreading; leaves are variable – those on the lower portions of the plant widest in the middle or the end of the leaf, and leaves above the middle of the plant are widest towards the base of the leaf, all leaves have 1 main vein, stems with longitudinal ridges or grooves.

**Plant Height:** 2-5 ft., erect

**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous

**Pollinator Value:** The flower is attractive to bumble bees and butterflies. Goldenrods are quality nectar and pollen sources for pollinators and other beneficial insects. It hosts a number of oligolege bees.

**Habitat:** Upland prairies, dry to mesic upland forests, dry open site, and roadsides.

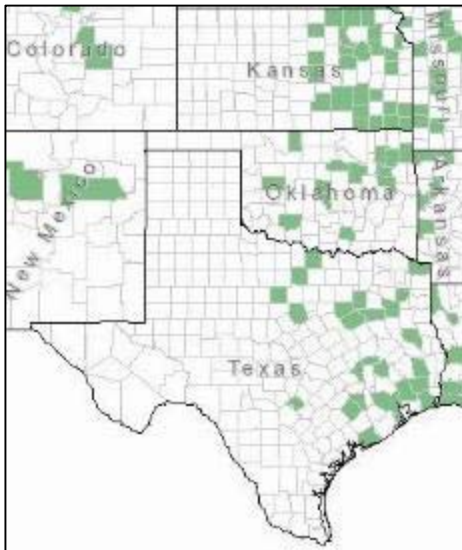




Photo: R.W. Smit, Lady Bird Johnson Wildflower Center

Close-up of Flowers



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



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Illinois Natural History Survey

Mature plant



Photo: John Hilty, Illinois Wildflowers

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 ft., but may reach 6 ft., erect **Blooms/Fruits:** May–September

**Duration:** Perennial, herbaceous

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

**Habitat:** Wet prairies, savannahs, and roadside ditches.

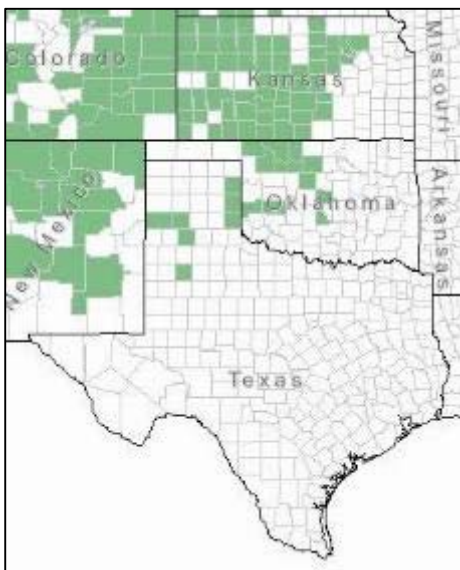


Photo: John Hix, Lady Bird Johnson Wildflower Center



Photo: John Hix, Lady Bird Johnson Wildflower

Full flowering/close-up of blooms



Photo: John Hix, Lady Bird Johnson Wildflower Center



Photo: Bennie Bengston, Lady Bird Johnson Wildflower Center

Fruit



Photo: Brooke Beyerley Lady Bird Johnson

photo by M. B. By

Stem and Leaf arrangement



Photo: Fran Cox, Lady Bird Johnson Wildflower Center

Mature fruit with seed

# Smooth Blue Aster (*Symphyotrichum laeve*)

## Aster Family

**Other Common Names:** smooth aster

**Scientific Name:** *Symphyotrichum laeve* (L.) Á. Löve & D. Löve  
 SYLA3

**Plant Symbol:**

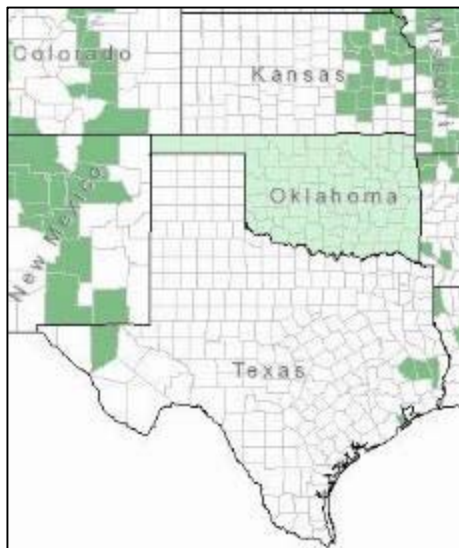
**Distinguishing characteristics:** Flowering heads few to many on the ends of ascending branches, rays are blue to lavender and the center is yellow; leaves are widest near the middle and sometimes heart-shaped, generally without hairs; leaf stems absent or very short; basal leaves and those on the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

**Plant Height:** 2-4 ft., 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. There are a number of aster-oligolege bees that feed on the pollen.

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





Full flowering/close-up of flowers



Stem and leaf arrangement



Mature plant

# Smooth Oxeye (*Heliopsis helianthoides*)

Aster Family

**Other Common Names:** oxeye sunflower, false sunflower

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

**Plant Symbol:** HEHE5

**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.

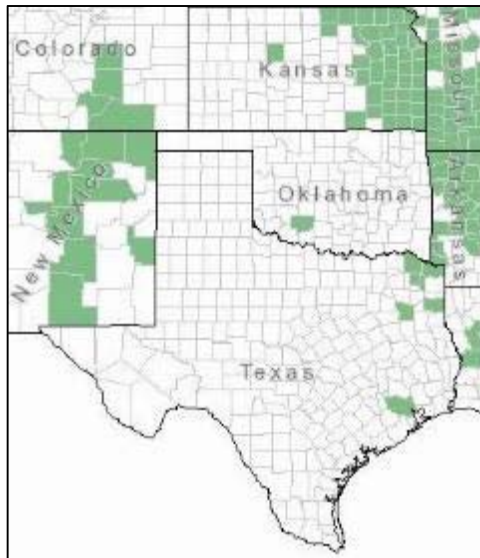
**Plant Height:** 3-5 ft., erect

**Blooms/Fruits:** June-September

**Duration:** Perennial, herbaceous (from creeping rhizomes)

**Pollinator Value:** This summer blooming flower is of high value to many pollinators and beneficial insects. It has its own oligolege bee, and it attracts butterflies.

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







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Illinois Natural History Survey

Full flowering/close-up of blooms



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



Julie Makin, Lady Bird Johnson  
Wildflower Center



Photo: Robert Stone, Lady Bird Johnson  
Wildflower Center

Mature plant

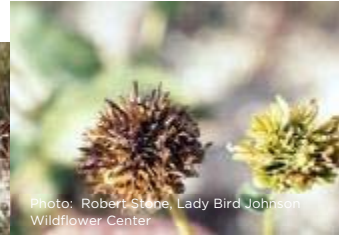


Photo: Robert Stone, Lady Bird Johnson  
Wildflower Center



Photo: John Hilty, Illinois Wildflowers

Stem arrangement



Photo: John Hilty, Illinois Wildflowers

Leaf

# Sneezeweed (*Helenium amarum*)

Aster Family

**Other Common Names:** bitter sneezeweed, yellow dog fennel

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

**Plant Symbol:** HEAM

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 1-3 ft.

**Blooms/Fruits:** April-June; until October

**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.

**Pollinator Value:** *Helenium amarum* 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.

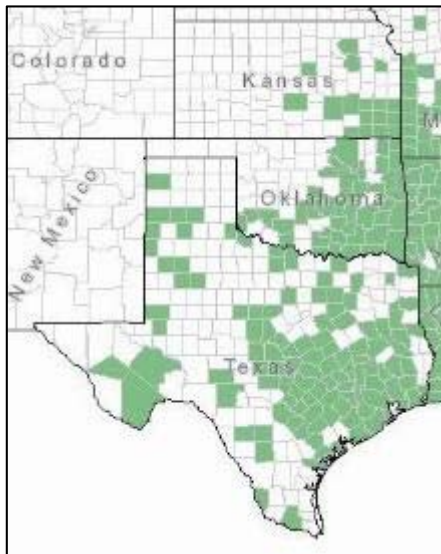


Photo: Andy and Sally Wasowski, Lady Bird Johnson



Photo: Marcus Joseph, Lady Bird Johnson Wildflower



Photo: Bruce Leander, Lady Bird Johnson

Flowering/close-up of flowers (note: 3 lobes on ray)



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

Early seed maturity



Photo: Steven Schwartzman, Lady Bird Johnson

Flower head after rays have fallen



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

# Soft-hair Marbleseed (*Onosmodium bejariense*)

## Borage Family

**Other Common Names:** false gromwell, soft-hair false gromwell

**Scientific Name:** *Onosmodium bejariense* DC. ex A. DC. **Plant Symbol:** ONBE

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-3 ft.

**Blooms/Fruits:** May-August

**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. May have a woody base.

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

**Habitat:** Grasslands, forest openings, limestone outcrops.

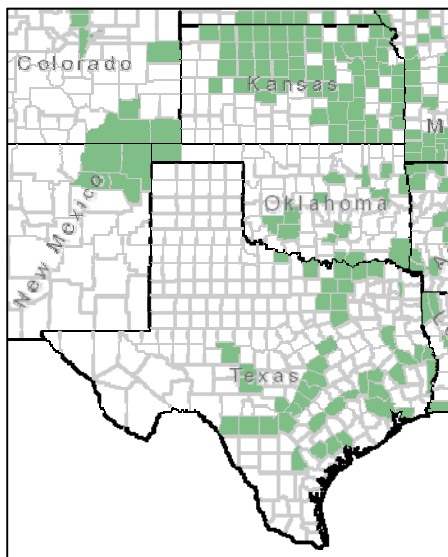


Photo: W.D. and Dolphia Branford, Lady Bird Johnson Wildflower Center



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Bruce Leander, Lady Bird Johnson Wildflower

Close-up of flowers; stem and leaf arrangement



Photo: Corey Raimond

Seedling



Photo: Corey Raimond

Seed

# Spanish Gold (*Grindelia papposa*)

Aster Family

**Other Common Names:** goldenweed, sawleaf daisy

**Scientific Name:** *Grindelia papposa* G.L. Nesom & Suh

**Plant Symbol:** GRPA8

**Duration:** Annual, Biennial

**Growth Habit:** Forb/herb

**Plant Height:** 2-5 ft., variable

**Blooms/Fruits:** August–September

**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.

**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.

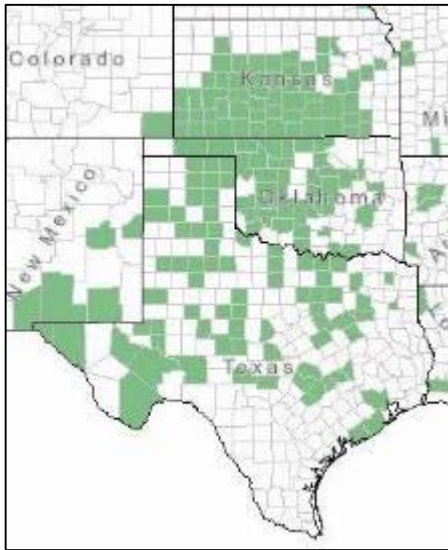


Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center



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

Flowering



Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center

Close-up of flower and buds



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

Stem and leaf

# Spider Milkweed (*Asclepias asperula*)

## Milkweed Family

**Other Common Names:** antelope horns, trailing milkweed

**Scientific Name:** *Asclepias asperula* (Decne.) Woodson

**Plant Symbol:** ASAS

**Family:** Asclepiadaceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-2 ft.

**Blooms/Fruits:** April-June, September

**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.

**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.

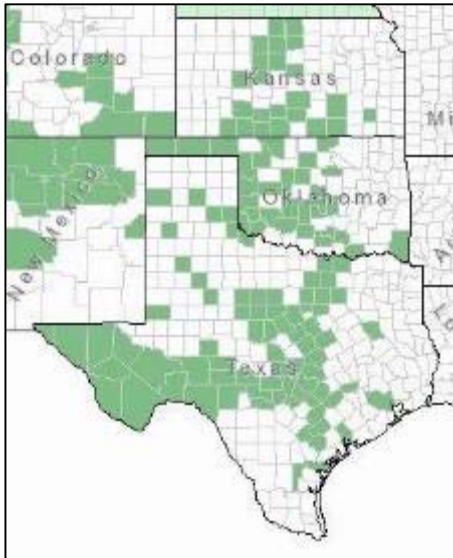


Photo: Pam Williams, Lady Bird Johnson Wildflower Center





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



Fruit



Empty fruit pod

# 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 ft., erect

**Blooms/Fruits:** June-September

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

**Pollinator Value:** The nectar may attract Hummingbirds. Also popular with butterflies and long-tongued bees.

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

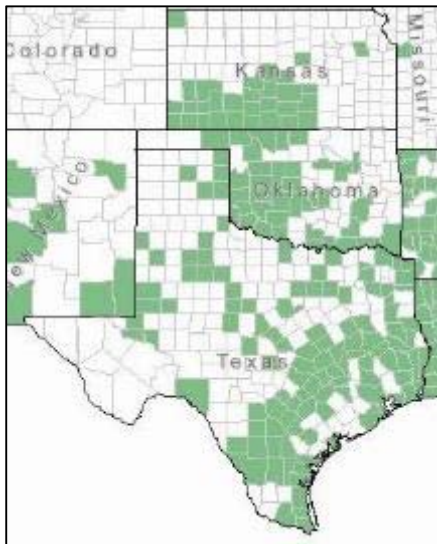


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center



Photo: Kimberly Kline, Lady Bird Johnson Wildflower Center



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



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms



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



Photo: John Hiltv, Illinois Wildflowers

Stem and leaf arrangement/ 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 ft., erect

**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.

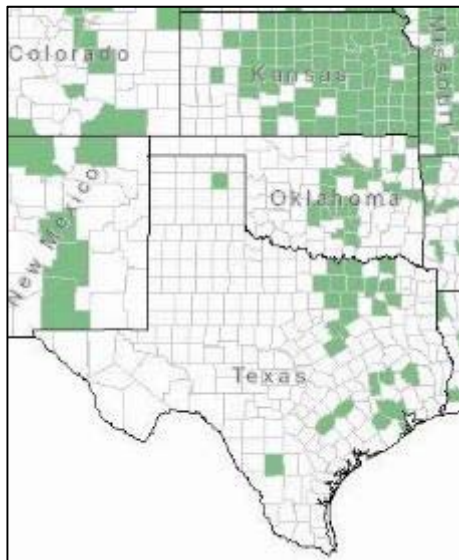


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center



Full flowering/close-up of blooms



Stem and leaf arrangement



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

# Stiff Tickseed (*Coreopsis palmate*)

Aster Family

**Other Common Names:** stiff coreopsis, finger coreopsis

**Scientific Name:** *Coreopsis palmata* Nutt.

**Plant Symbol:** COPA10

**Distinguishing characteristics:** Flowering heads with yellow rays and a yellow center, 2-3 in. across, borne singly or in a loose clusters of flower heads; leaves are opposite on the stem and sessile, each leaf divided into 3-lobes resembling skinny fingers.

**Plant Height:** 1-3 ft., erect

**Blooms/Fruits:** May-September

**Duration:** Perennial, herbaceous (with long creeping rhizomes)

**Pollinator Value:** This summer blooming wildflower provides nectar and pollen to native bees and other invertebrates.

**Habitat:** Upland prairies, openings in forests, old fields, and fallow areas.





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



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

Full flowering/close-up of blooms



Photo: Mike Haddock



Photo: © 2007 K. Chayka

Stem and leaf



© K. R. Robertson  
Illinois Natural History Survey

Mature plant

# Swamp Milkweed (*Asclepias incarnate*)

## 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 ft., erect

**Blooms/Fruits:** June–October

**Duration:** Perennial, herbaceous

**Pollinator Value:** Laval 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.

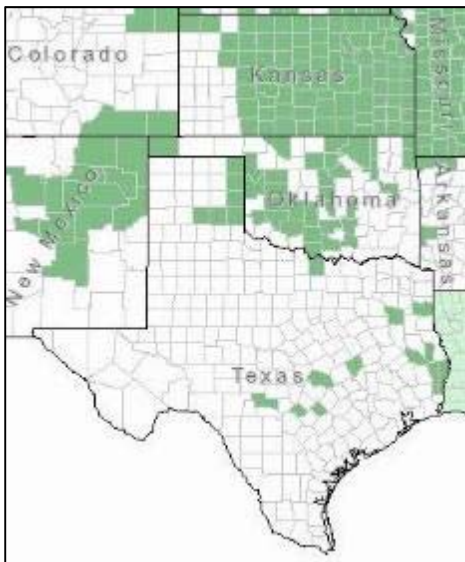


Photo: Jennifer Anderson ©





Photo: Jennifer Anderson ©

Full flowering/close-up of blooms



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



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

Leaf arrangement



Photo: Steve Eggers, USACE

Fruit



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seed

# Sweetscented Joe Pye Weed (*Eutrochium purpureum*)

Aster Family

**Other Common Names:** sweet joe pye weed, green-stemmed joe pye weed, purple joe pye weed

**Scientific Name:** *Eutrochium purpureum*      **Plant Symbol:** EUPU21

**Distinguishing characteristics:** Flower heads pale-pink to light purple in large dome-shaped, terminal inflorescence; leaves are in whorls of 3 – 4 at each leaf node, broadly lance-shaped; stems have dark purple splotches at the leaf nodes on an otherwise green stem.

**Plant Height:** 3-6+ ft., erect

**Blooms/Fruits:** July–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** This late summer flower provides nectar for long-tongued bees and butterflies.

**Habitat:** Bottomland forests, open wooded areas, and banks of rivers and streams.





Photo: Mike Haddock



Photo: Mike Haddock



Photo: John Hilty, Illinois



Photo: John Hilty, Illinois Wildflowers



Photo: John Hilty, Illinois Wildflowers

Close-up of leaf and stem



Photo: Mike Haddock

Mature plant

# Tall Blazing Star (*Liatris aspera*)

## Aster Family

**Other Common Names:** rough gayfeather

**Scientific Name:** *Liatris aspera* Michx.

**Plant Symbol:** LIAS

**Distinguishing characteristics:** Flower heads are in small powder-puffs interspersed along an elongate spike-like inflorescence; the leaves are widest towards the middle or tip of the leaves, but they are always very narrow, appearing linear.

**Plant Height:** 2-4 ft., erect

**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous (with a round corm)

**Pollinator Value:** Monarchs are known to visit this plant. Bees and butterflies are attracted to the flowers of this late summer/fall nectar source.

**Habitat:** Upland prairies, glades, openings of mesic to dry upland forests, pastures, and roadsides.

**Note:** Several *Liatris* species are similar in appearance to Tall Blazing Star. This species can be distinguished from others by having the bracts under the flower heads with thin, transparent margins that are purplish-tinged and appearing torn. The individual flowers are hairy within the floral tube, and the terminal head is NOT larger than the rest of the heads.

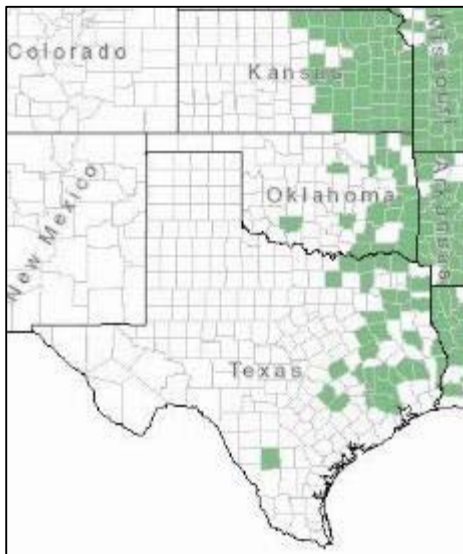


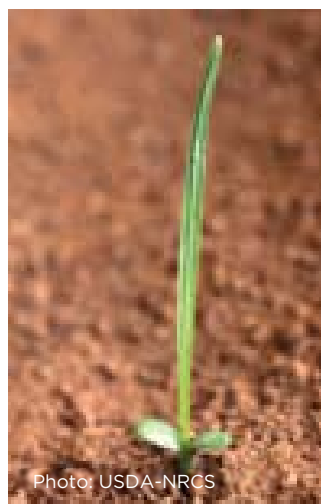
Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Full flowering/close-up of blooms



Mature plant



Seedlings

# Texas Vervain (*Verbena halei*)

## Aster Family

**Other Common Names:** blue vervain, candelabra vervain, slender verbena, standing vervain, Texas verbena

**Scientific Name:** *Verbena halei* Small

**Plant Symbol:** VEHA

**Duration:** Perennial

**Growth Habit:** Forb/herb; subshrub

**Plant Height:** 1-3.5 ft.

**Blooms/Fruits:** April-October

**Distinguishing characteristics:** Flowers are bluish to lavender with 5 petals that are fused together at the base and borne on several long, slender spikes, flowering from the base to the tip of the spike; leaves occur opposite on the stem and show a variation from toothed margins to lobed to deeply dissected. The lower the leaf, the deeper the degree of lobing/dissection.

**Pollinator Value:** This flower provides nectar to many species of butterfly.

**Habitat:** Moist meadows, prairies, open woodlands.

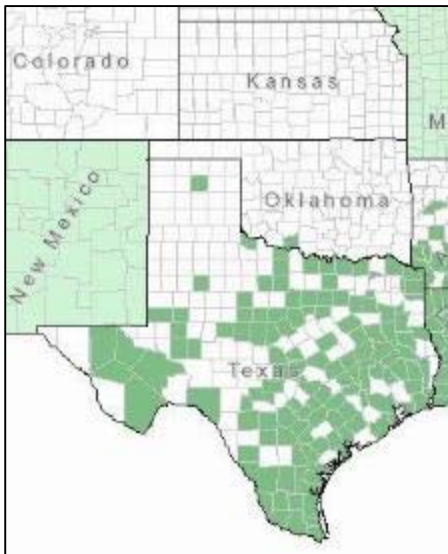


Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center



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

Flowering/close-up of flower



Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Habitat of Texas vervain



Seed

# Western Wallflower (*Erysimum asperum*)

Mustard Family

Other Common Names: none

**Scientific Name:** *Erysimum asperum* (Nutt.) DC.  
 ERAS2

**Plant Symbol:**

**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 x 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 ft.  
 April-May

**Blooms/Fruits:**

**Duration:** Biennial to Perennial, herbaceous

**Pollinator Value:** Most *Erysimum* spp. is 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.

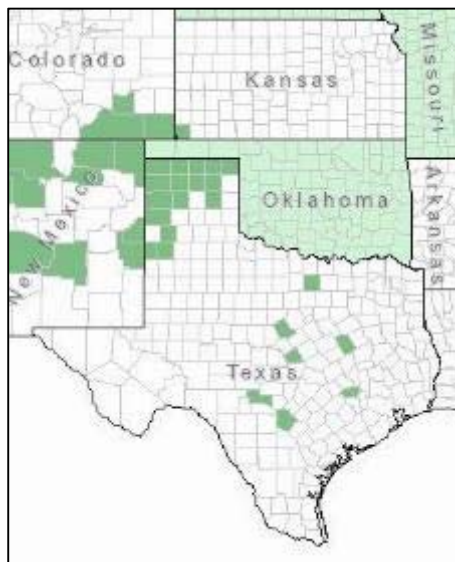


Photo: Mike Haddock





Flowering and close-up of flowers



Leaf and stem

# White Crownbeard (*Verbesina virginica*)

**Aster Family**

**Other Common Names:** frostweed, iceweed, squaw-weed, Virginia crown-beard

**Scientific Name:** *Verbesina virginica* L.    **Plant Symbol:** VEV13

**Family:** Asteraceae

**Duration:** Biennial, Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 4 - 8 ft.

**Blooms/Fruits:** August - November

**Distinguishing characteristics:** Stems are winged and densely covered with short wooly hairs appearing felt-like; white flower heads; seeds winged and with two barbed awns at the tip.

**Pollinator Value:** This late season nectar source has been noted as important to fall butterflies and migrating monarchs.

**Habitat:** Bottomlands, floodplains, woodland borders, tree driplines and savannahs (40% shade), pastures, & disturbed sites.

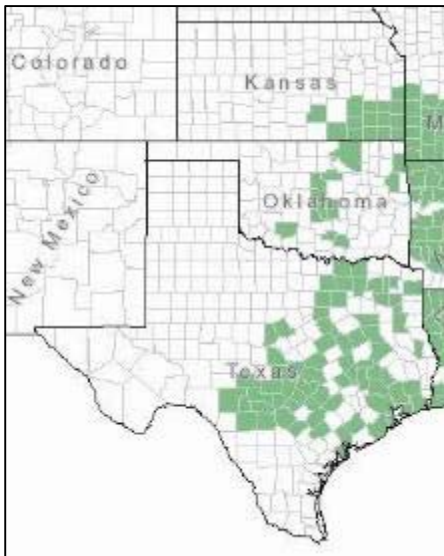


Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center



Seedling (note the winged-stem)



Flowering



Close-up of winged stem



# 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

**Plant Symbol:** SYER

**Common Synonym:** *Aster ericoides* L.

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 2-3 ft.

**Blooms/Fruits:** September–November

**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.

**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.

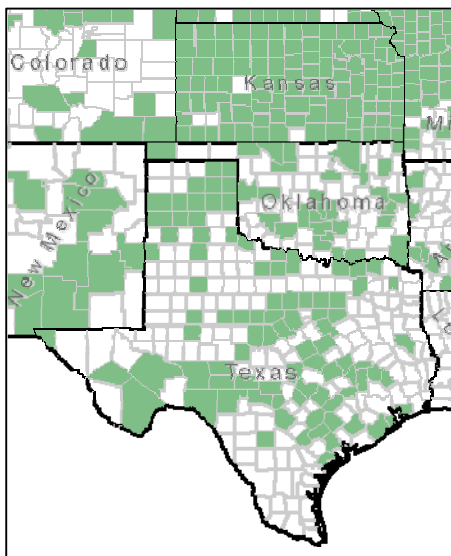


Photo: Terry Glase, Lady Bird Johnson Wildflower Center



Flowering/close-up of flowers



Stem and leaf arrangement



Seedling

# White Prairie Clover (*Verbena halei*)

Pea Family

Other Common Names: none

Scientific Name: *Verbena halei* 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.

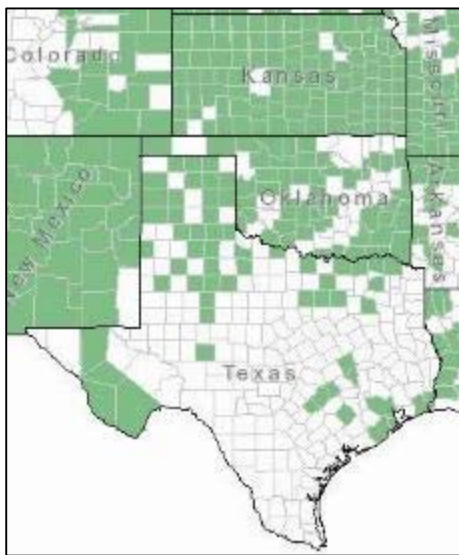
**Plant Height:** 1-2 ft., erect

**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.





Full flowering/close-up of flowers



Stem and leaf arrangement

# Wholeleaf Rosinweed (*Silphium integrifolium*)

Aster Family

**Other Common Names:** entire-leaf rosinweed, rosinweed

**Scientific Name:** *Silphium integrifolium* Michx.

**Plant Symbol:** SIIN2

**Distinguishing characteristics:** Flowering heads in open loose inflorescences, rays yellow and the central disc yellow; leaves occur somewhat uniformly along the stem, are opposite each other on the stem, are widely lance-shaped to heart shaped, except for some basal leaves they are attached directly to the stem and without a leaf stalk; the leaf bases are heart shaped and clasping the stem or taper down the stem but do not fuse together with the leaf on the opposite side of the stem.

**Plant Height:** 2-6 ft., erect

**Blooms/Fruits:** July–September

**Duration:** Perennial, herbaceous (from short, stout rhizomes)

**Pollinator Value:** This flower provides nectar and pollen to bees and other beneficial insects.

**Habitat:** Upland prairies, open upland forests, banks of streams and rivers, edges of crop fields, and roadsides.

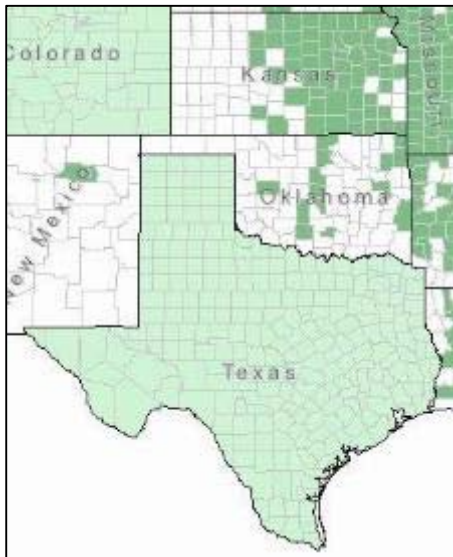






Photo: 2001 © Peter Dziuk

Full flowering/close-up of flowers and base



Photo: John Hilty, Illinois



© 2009 Katy Chayka



Vegetative growth and close-up of stem and leaf



stem

# Wild Bergamot (*Monarda fistulosa*)

Mint 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 ft., erect

**Blooms/Fruits:** May–September

**Duration:** Perennial, herbaceous (with slender, creeping rhizomes)

**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.

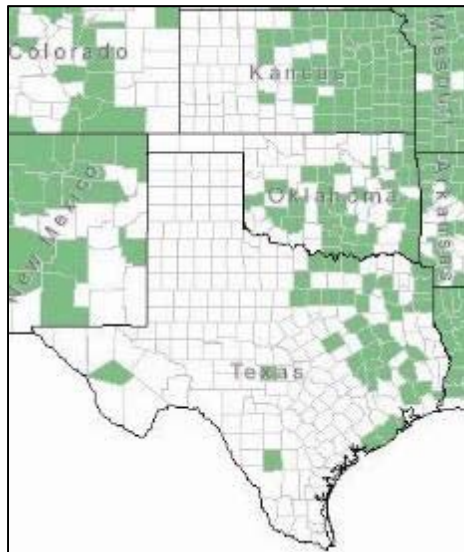




Photo: Alan Cressler, Lady Bird Johnson



Photo: Eric Beckers, Lady Bird Johnson Wildflower Center



Photo: Thomas Muller, Lady Bird Johnson Wildflower Center



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Flower bud

Full flowering/close-up of blooms



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

Foliage/leaf arrangement

# Wild Blue Phlox (*Phlox divaricata*)

## Phlox Family

**Other Common Names:** Louisiana phlox, blue woodland phlox, sweet william, wild sweet william

**Scientific Name:** *Phlox divaricata* L.

**Plant Symbol:** PHDI5

**Distinguishing characteristics:** Stems of 2 types – vegetative stems are spreading to slightly ascending and densely hairy, flowering stems are ascending to partially erect with moderate hairiness some of which are gland-tipped; leaves are all opposite on the stem, elliptic on the vegetative stems and widest towards the tip on flowering stems ; flowers are lavender, light purple, to pale blue in dome-shaped clusters, each flower has 5-spreading petals with an elongate tube extending to the base.

**Plant Height:** Flowering stems 1-2 ft., vegetative stems 2-3 inches  
April-June

**Blooms/Fruits:**

**Duration:** Perennial, herbaceous to partly evergreen (with slender rhizomes)

**Pollinator Value:** The plant serves as a late summer and fall nectar source for the monarch butterfly, native bees, and other beneficial insects. It is highly attractive to many types of pollinators.

**Habitat:** Bottomland and upland forests, and moist woodlands.

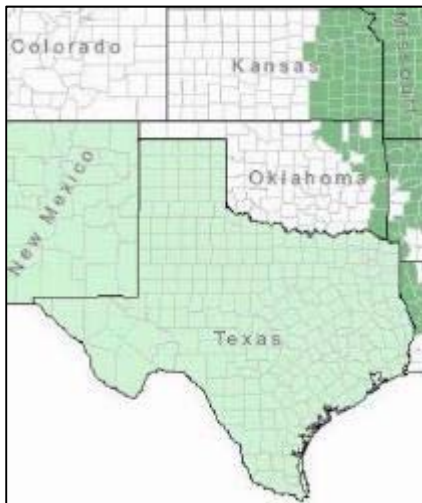


Photo: Mike Haddock



Full flowering/close-up of blooms



Close-up of stem and leaf (red circle)/habitat

# Wrinkleleaf Goldenrod (*Solidago rugosa*)

## Aster Family

**Other Common Names:** rough-leaved goldenrod, rough-stemmed goldenrod, verge d'or rugueuse

**Scientific Name:** *Solidago rugosa* Mill.

**Plant Symbol:** SORU2

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 2-6 ft.

**Blooms/Fruits:** August-October

**Distinguishing characteristics:** Leaves with only 1 obvious vein; upper surface of leaves and stems rough/raspy to the touch. Flower heads many on recurved floral branches in an overall pyramid-shaped inflorescence, flowers all yellow; leaves are lance-shaped or elliptical and become smaller towards the top of the stem; basal leaves withered at flowering.

**Pollinator Value:** Wrinkleleaf goldenrod provides floral resources to many insects, including pollinators and butterflies.

**Habitat:** Bottomland forests, stream banks, pastures, and roadsides.

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

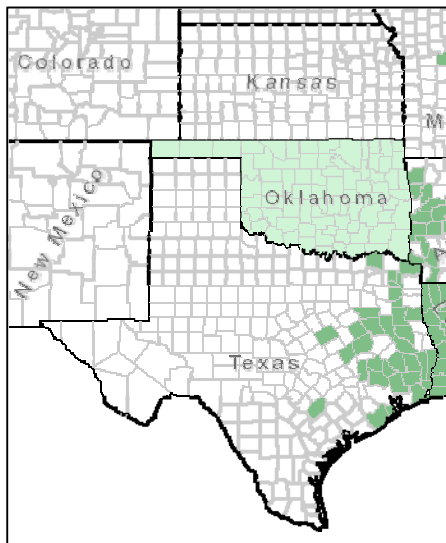


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center



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

Close-up of flowers



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



Photo: Tom Kent

Leaf arrangement



Photo: Tom Kent

Close-up of stem

# Zizotes Milkweed (*Asclepias oenotheroides*)

## Milkweed Family

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

**Scientific Name:** *Asclepias oenotheroides* Cham. & Schtdl.      **Plant Symbol:** ASOE

**Family:** Asclepiadaceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1-1.5 ft.

**Blooms/Fruits:** May–October

**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.

**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.

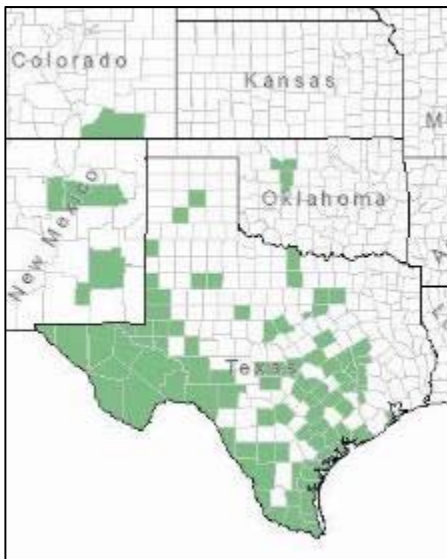


Photo: Robert Stone, Lady Bird Johnson Wildflower Center





Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Flowering/close-up of flowers



Photo: Norman Flaigg, 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

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