



United States Department of Agriculture



# Important Plants of the Monarch Butterfly Western Coastal Plain Staff Guide



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## Preface

The Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG) and Decision Support Tool: Western Coastal Plain Edition 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 Arkansas, Louisiana, 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 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: Western Coastal Plain* (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).

- 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.

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

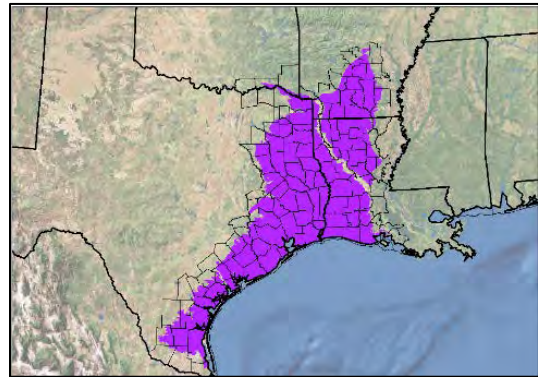


Fig. 1. Western Coastal Plain Monarch Region.



Fig. 2. Monarch butterfly nectaring on willowleaf aster (*Symphotrichum praealtum*) in Lafayette Parish, Louisiana. Asters are excellent floral resources for monarchs.

<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, 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 ½circular 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 egg shell 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.

**Milkweeds of the Western Coastal Plain Subregion:** There are many milkweed species native to this region of the U.S. The most common species is green antelope horn (*Asclepias viridis*). Less common but locally important are swamp milkweed (*A. incarnata*), butterfly milkweed (*A. tuberosa*), green comet milkweed (*A. viridiflora*), clasping milkweed (*A. amplexicaulis*), aquatic milkweed (*A. perennis*) and whorled milkweed (*A. verticillata*). Seeds for most of these species are commercially available. Finding local ecotypes may be more difficult. Some species of milkweed are rhizomatous (e.g. *A. syriaca*, *A. incarnata*, and *A. verticillata*), while others are tap-rooted (e.g. *A. tuberosa* and *A. perennis*). There are obvious advantages to the establishment of rhizomatous species in conservation plantings, and for those reasons, these species should be considered in the plant list.

**Trees and Shrubs:** Narrow bands of woody vegetation and edges of forested areas, can provided important fall resting sites (micro-climates) for migrating monarchs. Some trees (*Cercis canadensis*) and shrubs (*Cephalanthus occidentalis* and *Baccharis halimifolia*) provide excellent nectar sources to the monarch. However, the planting lists 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: Western Coastal Plain 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.
- 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 List:** The *Monarch WHEG Inventory List* is for use by conservation planners in the application of the herbaceous vegetation sampling portion of the *Monarch Butterfly Wildlife Habitat Evaluation Guide: Western Coastal Plain 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 gayfeathers. They are 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 Western Coastal Plain 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**

The species in these plant lists were developed from a review of the literature, in combination with monarch adult nectaring observations data compiled by the Xerces Society for Invertebrate Conservation (Xerces). Biologists from Xerces, USDA-NRCS, U.S. Fish and Wildlife Service, state resource management agencies, universities and conservations organizations contributed their observations.

# Monarch Planting List

Species name	Plant symbol	Common name	Growth habit	Monarch value	Bloom Period			States		
					Early	Mid	Late	A R	L A	T X
<i>Asclepias incarnata</i>	ASIN	swamp milkweed	forb/ herb	very high		x	x			
<i>Asclepias lanceolata</i>	ASLA2	fewflowered milkweed	forb/ herb	very high	x	x				
<i>Asclepias perennis</i>	ASPE	aquatic milkweed	forb/ herb	very high	x	x				
<i>Asclepias tuberosa</i>	ASTU	butterfly milkweed	forb/ herb	high		x	x			
<i>Asclepias viridis</i>	ASVI2	spider milkweed	forb/ herb	very high	x	x				
<i>Bidens aristosa</i>	BIAR	bearded beggarticks	forb/ herb	very high	x	x	x			
<i>Cirsium discolor</i>	CIDI	field thistle	forb/ herb	high		x	x			
<i>Conoclinium coelestinum</i>	COCO13	blue mistflower	forb/ herb	high		x	x			
<i>Echinacea pallida</i>	ECPA	purple prairie coneflower	forb/ herb	high		x				
<i>Eupatorium serotinum</i>	EUSE2	lateflowering thoroughwort	forb/ herb	high		x	x			
<i>Eutrochium fistulosum</i>	EUF14	Joe pye weed	forb/ herb	high		x	x			
<i>Gaillardia pulchella</i>	GAPU	Indian blanket	forb/ herb	high	x	x				
<i>Glandularia bipinnatifida</i>	GLBI2	Dakota mock vervain	forb/ herb	high	x	x	x			
<i>Helenium amarum</i>	HEAM	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	very high		x	x			
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/ herb	high		x				
<i>Liatris aspera</i>	LIAS	tall blazing star	forb/ herb	very high		x	x			
<i>Liatris elegans</i>	LIEL	pinkscale blazing star	forb/ herb	high		x	x			
<i>Liatris pycnostachya</i>	LIPY	prairie blazing star	forb/ herb	high		x	x			
<i>Monarda fistulosa</i>	MOFI	wild bergamont	forb/ herb	high		x				
<i>Monarda punctata</i>	MOPU	spotted beebalm	Forb /herb	high		x				

Species name	Plant symbol	Common name	Growth habit	Monarch value	Bloom Period			States		
					Early	Mid	Late	A R	L A	T 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	x				
<i>Pluchea odorata</i>	PLOD	sweetscent	forb/ herb	high		x	x			
<i>Polygonum pennsylvanicum</i>	POPE2	Pennsylvania smartweed	forb/ herb	high		x	x			
<i>Salvia azurea</i>	SAAZ	azura blue sage	forb/ herb	high		x	x			
<i>Salvia coccinea</i>	SACO5	blood sage	forb/ herb	high	x	x	x			
<i>Silphium integrifolium</i>	SLIN2	wholeleaf rosinweed	forb/ herb	high	x	x	x			
<i>Silphium laciniatum</i>	SILA3	compass plant	forb/ herb	high		x				
<i>Smallanthus uvedalius</i>	SMUV	hairy leafcup	forb/ herb	high		x				
<i>Solidago altimissa</i>	SOAL6	tall goldenrod	forb/ herb	high		x	x			
<i>Solidago petiolaris</i>	SOPE	downy ragged goldenrod	forb/ herb	high		x	x			
<i>Solidago sempervirens</i>	SOSE	seaside goldenrod	forb/ herb	high		x	x			
<i>Solidago speciosa</i>	SOSP2	showy goldenrod	forb/ herb	very high		x	x			
<i>Symphotrichum drummondii</i>	SYDR	Drummond's aster	forb/ herb	high		x	x			
<i>Symphotrichum patens</i>	SYPA11	late purple aster	forb/ herb	high		x	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				
<i>Verbesina virginica</i>	VEVI3	white crownbeard	forb/ herb	high		x	x			
<i>Vernonia gigantea</i>	VEGI	giant ironweed	forb/ herb	high		x	x			
<i>Vernonia texana</i>	VETE3	Texas ironweed	forb/ herb	high		x				


























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

# Monarch WHEG Inventory List

					Bloom Period		
Species name	Plant symbol	Common name	Growth habit	Monarch value	Early	Mid	Late
<i>Asclepias</i> spp.	ASCLE	milkweed	forb/herb	very high		x	x
<i>Baccharis halimifolia</i>	BAHA	eastern baccharis	shrub	high		x	x
<i>Bidens aristosa</i>	BIAR	bearded beggarticks	forb/herb	very high	x	x	x
<i>Cephalanthus occidentalis</i>	CEOC2	common buttonbush	shrub	high		x	x
<i>Cirsium discolor</i>	CIDI	field thistle	forb/herb	high		x	x
<i>Conoclinium coelestinum</i>	COCO13	blue mistflower	forb/herb	high		x	x
<i>Echinacea pallida</i>	ECPA	purple prairie coneflower	forb/herb	high		x	
<i>Eupatorium serotinum</i>	EUSE2	lateflowering thoroughwort	forb/herb	high		x	x
<i>Eutrochium fistulosum</i>	EUF14	Joe pye weed	forb/herb	high		x	x
<i>Gaillardia pulchella</i>	GAPU	Indian blanket	forb/herb	high	x	x	
<i>Glandularia bipinnatifida</i>	GLBI2	Dakota mock vervain	forb/herb	high	x	x	x
<i>Helenium amarum</i>	HEAM	sneezeweed	forb/herb	high	x	x	x
<i>Helianthus</i> spp.	HELIA3	sunflower	forb/herb	high		x	x
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/herb	high		x	x
<i>Liatriis</i> spp.	LIATR	blazing star	forb/herb	very high		x	x
<i>Monarda</i> spp.	MONAR	beebalm	forb/herb	high		x	x
<i>Packera obovata</i>	PAOB6	roundleaf ragwort	forb/herb	high	x		
<i>Phlox divaricata</i>	PHDI5	wild blue phlox	forb/herb	high	x		
<i>Pluchea odorata</i>	PLOD	sweetscent	forb/herb	high	x	x	x
<i>Polygonum pensylvanicum</i>	POPE2	Pennsylvania smartweed	forb/herb	high	x	x	x
<i>Salvia</i> spp.	SALVI	sage	forb/herb	high	x	x	x
<i>Silphium</i> spp.	SLIPH	rosinweed, compass plant	forb/herb	high	x	x	x
<i>Smallanthus uvedalius</i>	SMUV	hairy leafcup	forb/herb	high		x	
<i>Solidago</i> spp.	SOLID	goldenrod	forb/herb	high		x	x
<i>Symphotrichum</i> spp.	SYMP4	aster	forb/herb	high		x	x
<i>Verbena halei</i>	VEHA	Texas Vervain	forb/herb	high	x	x	x
<i>Verbesina virginica</i>	VEVI3	white crownbeard	forb/herb	high		x	x
<i>Vernonia</i> spp.	VERNO	ironweed	forb/herb	high		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
aquatic milkweed		<i>Asclepias incarnata</i>	
azura blue sage		<i>Asclepias lanceolate</i>	
bearded beggarticks		<i>Asclepias perennis</i>	
blood sage		<i>Asclepias tuberosa</i>	
blue mistflower		<i>Asclepias viridis</i>	
butterfly milkweed		<i>Bidens aristosa</i>	
common sunflower		<i>Cirsium discolor</i>	
compass plant		<i>Conoclinium coelestinum</i>	
Dakota mock vervain		<i>Echinacea pallida</i>	
downy ragged goldenrod		<i>Eupatorium serotinum</i>	
Drummond's aster		<i>Eutrochium fistulosum</i>	
fewflowered milkweed		<i>Gaillardia pulchella</i>	
field thistle		<i>Glandularia bipinnatifida</i>	
giant ironweed		<i>Helenium amarum</i>	
hairy leafcup		<i>Helianthus angustifolius</i>	
Indian blanket		<i>Helianthus annuus</i>	
Joe pye weed		<i>Heliopsis helianthoides</i>	
late purple aster		<i>Liatris aspera</i>	
lateflowering thoroughwort		<i>Liatris elegans</i>	
Pennsylvania smartweed		<i>Liatris pycnostachya</i>	
pinkscale blazing star		<i>Monarda fistulosa</i>	
prairie blazing star		<i>Monarda punctata</i>	
purple prairie coneflower		<i>Packera obovata</i>	
roundleaf ragwort		<i>Phlox divaricata</i>	
seaside goldenrod		<i>Pluchea odorata</i>	
showy goldenrod		<i>Polygonum pensylvanicum</i>	
smooth oxeye		<i>Salvia azurea</i>	
sneezeweed		<i>Salvia coccinea</i>	
spider milkweed		<i>Silphium integrifolium</i>	
spotted beebalm		<i>Silphium laciniatum</i>	
swamp milkweed		<i>Smallanthus uvedalius</i>	
swamp sunflower		<i>Solidago altimissa</i>	
sweetscent		<i>Solidago petiolaris</i>	
tall blazing star		<i>Solidago sempervirens</i>	
tall goldenrod		<i>Solidago speciosa</i>	
Texas ironweed		<i>Symphyotrichum drummondii</i>	
Texas vervain		<i>Symphyotrichum patens</i>	
white crownbeard		<i>Symphyotrichum praealtum</i>	
wholeleaf rosinweed		<i>Verbena halei</i>	
wild bergamont		<i>Verbesina virginica</i>	
wild blue phlox		<i>Vernonia gigantea</i>	
willowleaf aster		<i>Vernonia texana</i>	

# Aquatic Milkweed

## Milkweed Family

Other Common Names: white milkweed, smoothseed milkweed

Scientific Name: *Asclepias perennis* Walter

Plant Symbol: ASPE

Duration: Perennial, herbaceous

Plant Height: 1-2 feet.

Blooms/Fruits: May-September

Distinguishing characteristics: Stems usually solitary and branched with multiple pairs of opposite leaves; leaves are narrow, approximately 4 inches long by 1 inch wide, lance shaped, tapered at both ends, and with a short leaf stalk; inflorescences 2-6 on stalks from the axils of the upper leaves; flowers white and commonly fringed with pink while in bud.

Pollinator Value: Little is known about the pollination biology of this species. Flowers are visited by butterflies and native bees.

Habitat: Wetland habitats, shrub-tree bays and bogs, swamps sloughs, pond and lake margins, roadside ditches, and bottomland forests.

Note: The seeds of this wetland plant does not have the characteristic tuft of hairs of most milkweeds. Instead, the seeds are winged as an adaption for water dispersal as opposed to wind dispersal.

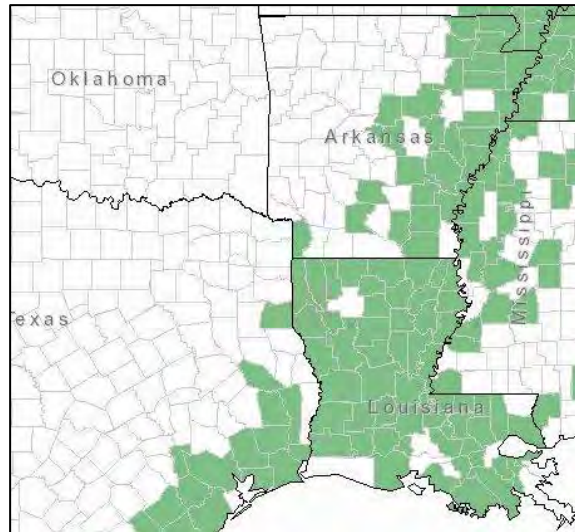


Photo by Harry Cliffe, Lady Bird Johnson Wildflower Center.





Full flowering/close-up of bloom

*Photos courtesy of Sally and Andy Wasowski and Joseph Marcus; Lady Bird Johnson Wildflower Center.*



Leaf arrangement/ leaf shape

*Photos courtesy of Pete Loos, Joseph Marcus and Alan Cressler, Lady Bird Johnson Wildflower Center.*

# Azure Blue

## Sage 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, bumble bees, and other long-tongued bees.

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

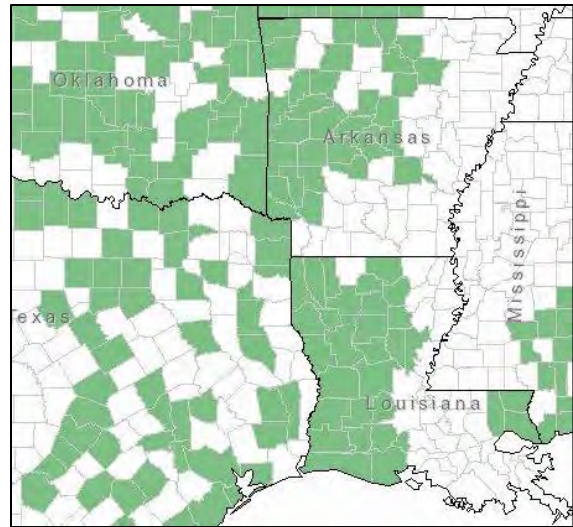
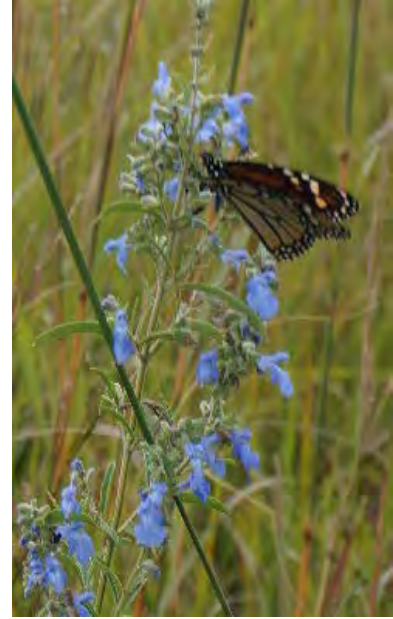


Photo courtesy of W.D. and Dolphia Branford, Lady Bird Johnson Wildflower Center.



### Flowering

*Photos courtesy of Carolyn Fannon, Lady Bird Johnson Wildflower Center; Alan Cressler, Lady Bird Johnson Wildflower Center; Anne Stine, Xerces Society.*



### Leaf and Stem Arrangement

*Photos Courtesy of Southeasternflora.com*

# Bearded Beggarticks

## Aster Family

Other Common Names: tickseed sunflower, awnless beggarticks

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

Plant Symbol: BIAR

Duration: Annual or Biennial

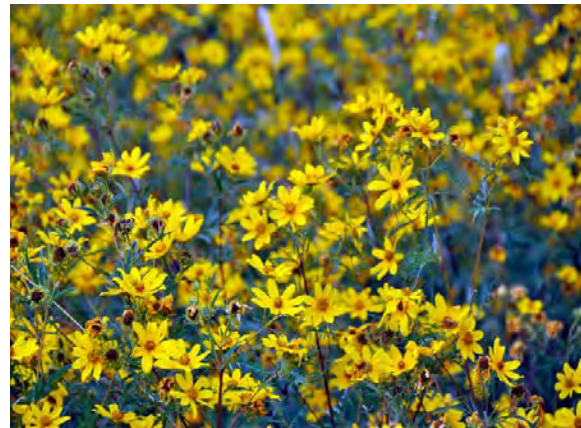
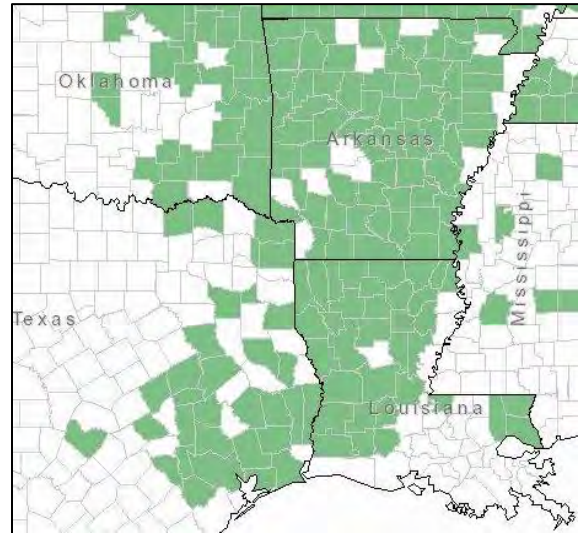
Plant Height: variable, 1-5 ft.

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 lack the characteristic awns on top of most beggartick species, but may have two pointed “bumps” or may just be rounded on the top of the seed.

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

Habitat: Low moist ground, wetlands, ditches, and low ground



Photos courtesy of Mike Haddock.



Full flowering/ close-up of flowers

*Photo courtesy of Mike Haddock.*



(Top Left) Stem and leaf; (Right) Seedling; (Bottom Left) Seed

*Photos courtesy of Mike Haddock and KR Robertson.; ARS.*

# Blood Sage

## Mint Family

Other Common Names: tropical sage, Texas sage, scarlet sage, hummingbird sage, red sage, Indian-fire, mirto

Scientific Name: *Salvia coccinea* P.J. Buchoz ex Etlinger

Plant Symbol: SAC05

Duration: Perennial, subshrub in hardiness zones 10 - 11; Annual, herbaceous in zones 7 - 9

Distinguishing Characteristics: Stems branched, leafy throughout, without a basal rosette; leaves opposite on the stem, widely spear shaped, 3 inches long by 2 inches wide, tip pointed, margins scalloped, and base abruptly rounded to heart-shaped; flowers in terminal whorls, two lipped, bright to deep red in color.

Plant Height: 2 - 3 feet

Blooms/Fruits: March - November

Pollinator Value: Nectar is loved by numerous butterfly species and hummingbirds.

Habitat: Open woodland, sandy soils, chaparral.

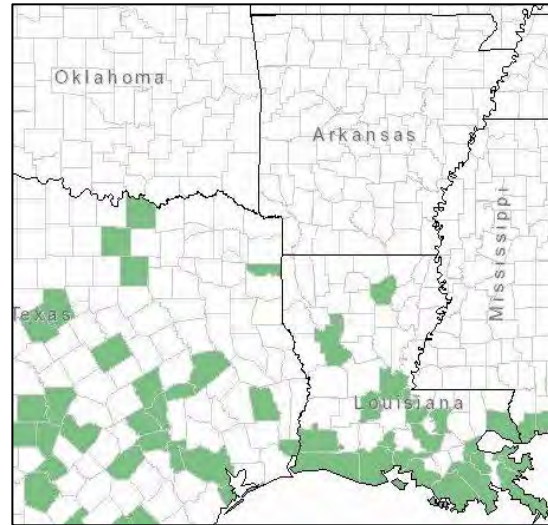


Photo: Paul Cox, Lady Bird Johnson Wildflower Center



Full flowering/close-up of blooms

*Photos courtesy (clockwise from left) of W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center; Ray Mathews, Lady Bird Johnson Wildflower Center; Joseph Marcus, Lady Bird Johnson Wildflower Center*



Leaf and Stem Arrangement

# Blue Mistflower

## Aster Family

Other Common Names: wild ageratum, blue boneset

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

Plant Symbol: COCO13

Duration: Perennial, herbaceous

Plant Height: Erect to 3 feet, sometimes sprawling over other vegetation

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.

Pollinator Value: Blue mistflower is a wonderful nectar source for monarchs and favored by many other butterflies as well as bees. Male Queen butterflies, another species of milkweed butterflies 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

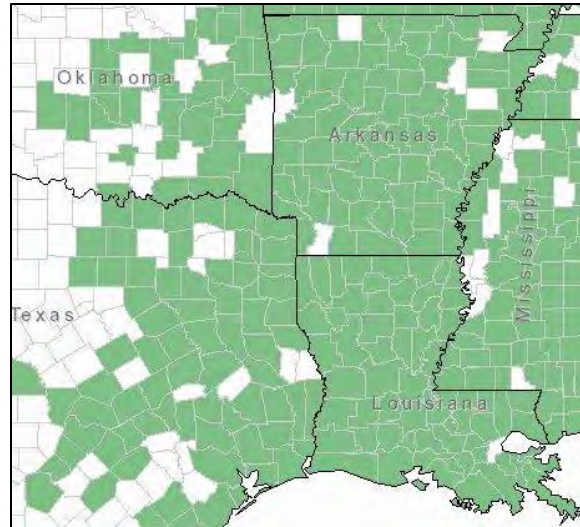


Photo courtesy of Mike Haddock.





Flowering

*Photos Courtesy of Joseph A. Marcus, Lady Bird Wildflower Center; Carolyn Fannin, Lady Bird Johnson Wildflower Center*



Stem and Leaf Characteristics

*Photos courtesy of Peggy Romfh, Lady Bird Johnson Wildflower Center; Mike Haddock*

# Butterfly Milkweed

## Milkweed Family

Other Common Names: butterfly weed, orange milkweed

Scientific Name: *Asclepias tuberosa* L.

Plant Symbol: ASTU

Duration: Perennial

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.

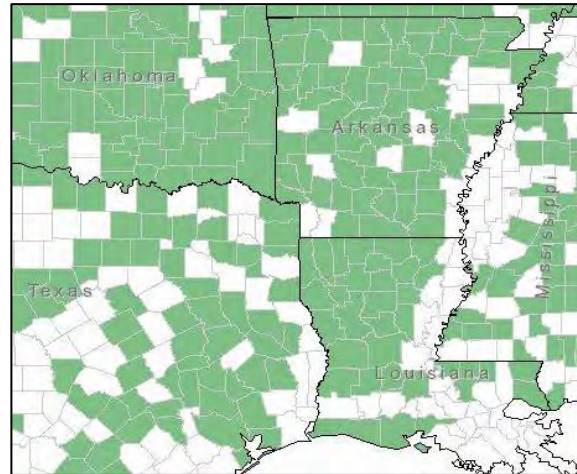
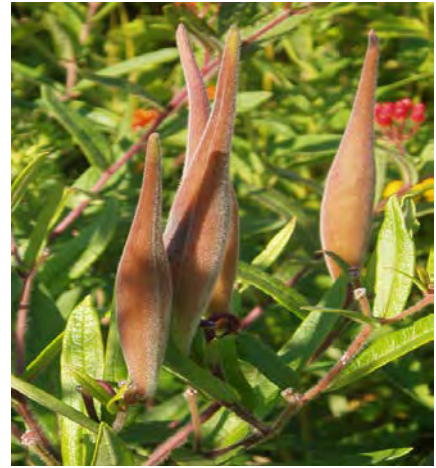


Photo courtesy of Edith Bettinger, Lady Bird Johnson Wildflower Center



Flowers, flowering plant, and fruit

Photos courtesy of: Bruce Leander, Lady Bird Johnson Wildflower Center; Lillian G. Flaigg, Lady Bird Johnson Wildflower Center; Julie Makin, Lady Bird Johnson Wildflower Center



Seedling and mature fruit with seed

Photos courtesy of: Lady Bird Wildflower Center Staff; Photo: Barbara Nuffer, Lady Bird Johnson Wildflower Center

# Common Sunflower

## Aster Family

Other Common Names: Kansas sunflower, mirasol, sunflower

Scientific Name: *Helianthus annuus* L.

Plant Symbol: HEAN3

Duration: Annual

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.

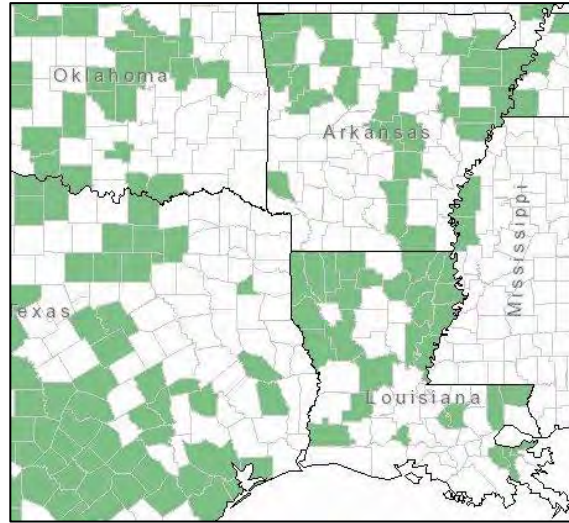
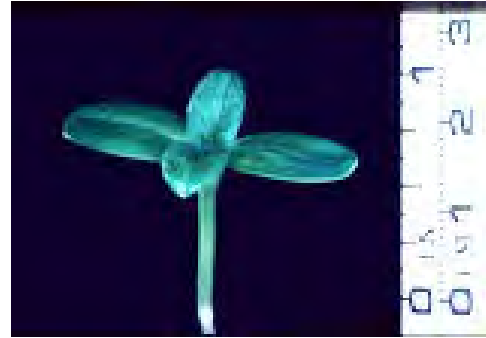
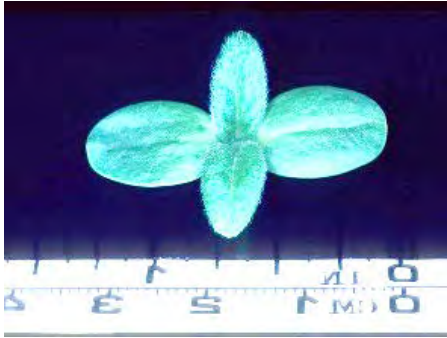
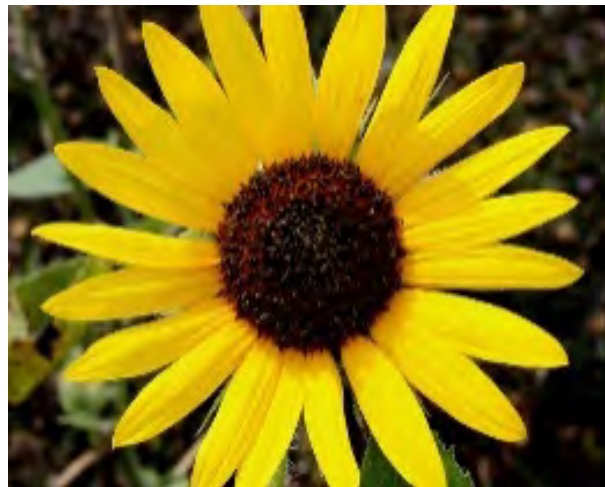


Photo: David Northington, Lady Bird Johnson Wildflower Center



### Seedling

*Photos courtesy of Center Staff, Lady Bird Johnson Wildflower Center*



### Developing flower bud, full flower

*Photos courtesy of Jim Yarbrough, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center*



### Stem, Mature Plant

*Photos courtesy of Joseph Marcus Lady Bird Johnson Wildflower Center; Steven Schwartzman, Lady Bird Johnson Wildflower Center*

# Compass Plant

## Aster Family

Other Common Names: none

Scientific Name: *Silphium laciniatum* L.

Plant Symbol: SILA3

Duration: Perennial, herbaceous (with woody taproot)

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 and 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.

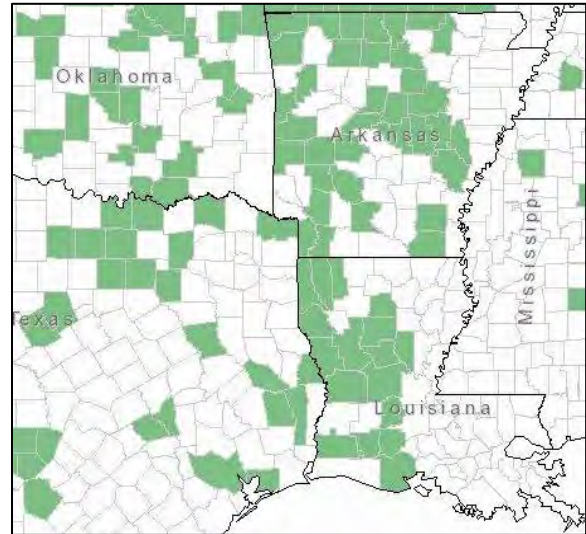


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Flowers and flower bud

Photo: W.D. and Dolphia Bradford, Lady Bird Johnson Wildflower Center; Julie Makin, Lady Bird Johnson Wildflower; Paul Cox, Lady Bird Johnson Wildflower Center



Seedling, Leaf

Photo: USDA-NRCS; Julie Makin, Lady Bird Johnson Wildflower Center

# Dakota Mock Vervain

## 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.

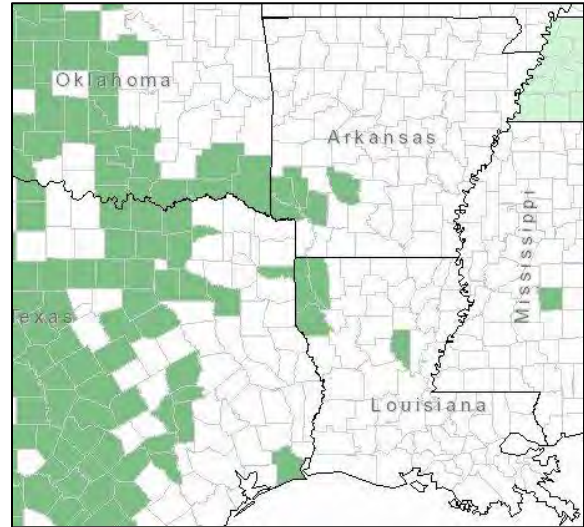


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center





Flowering and Close up of Flower

*Photo: ;src sfasu u.edu; Alan Cressler, Lady Bird Johnson Wildflower Center*



Leaf Arrangement/Mature

*Photo: Mike Haddock u.edu; src. Sfasu.edu*

# Downy Ragged Goldenrod

## 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.

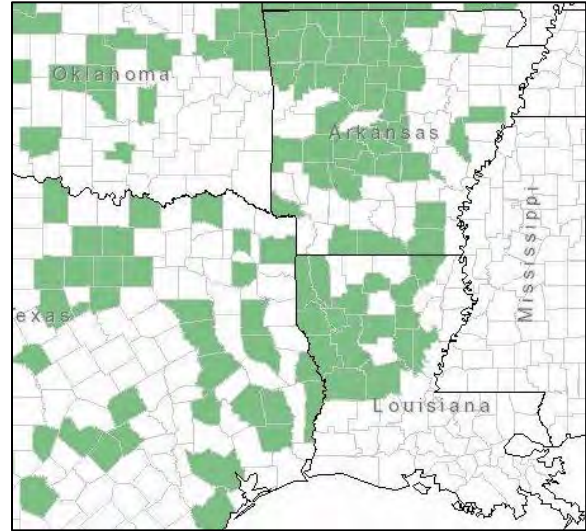
Blooms/Fruits: August-October

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 similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.





Flowering/Close up Flower

*Photos: Mike Haddock*



Stem and Leaf Arrangement/Mature Plant

*Photos: Mike Haddock*

# Drummond's Aster

## Aster Family

Other Common Names: Texas aster

Scientific Name: *Symphotrichum drummondii*  
 (Lindl.) G.L. Nesom

Plant Symbol: SYDR

Duration: Perennial, herbaceous

Plant Height: 2-4 feet

Blooms/Fruits: August-October

Distinguishing characteristics: Stems one or more from short rhizomes, densely hairy with short curled hairs; leaves with a long stem, heart-shaped with rounded bases and a pointed tip, margins toothed; flowering heads several, terminal, and daisy-like, with purplish blue to purple or almost white rays and a maroon or yellow center depending on age.

Pollinator Value: visited by a wide variety of pollinators including bees, flies, butterflies, moths, and even some beetles.

Habitat: Open woods and prairies, thickets, upland prairies, ditch banks, and roadsides.

Note: Two varieties occur in the Western Gulf Region. Variety *texanum* (Texas aster) is more southern occurring in Louisiana and Texas with a few sightings from other states. Variety *drummondii* does not occur in Texas, but found natively in Louisiana, Arkansas, and other states.

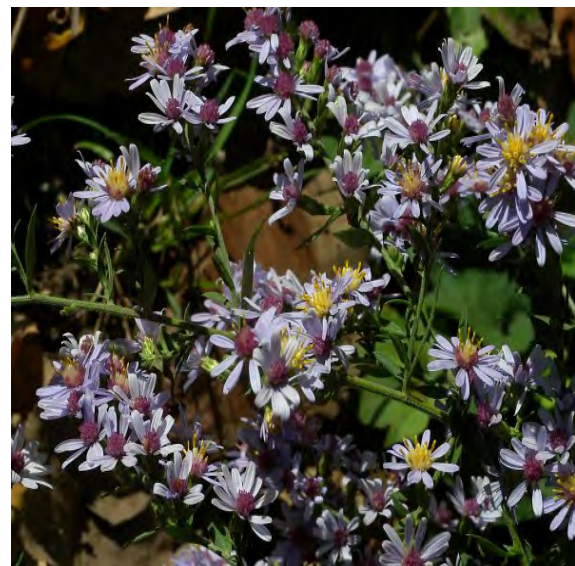
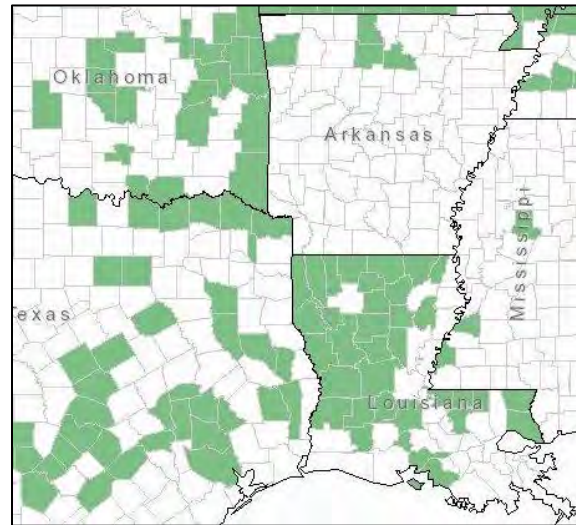


Photo: John Hilty, Illinois wildflower



Full Flowering/Close up of blooms

*Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center (left); Mike Haddock (right)*



Stem and leaf

*Photos: John Hilty, Illinois wildflower*

# Fewflowered Milkweed

## Milkweed Family

Other Common Names: few-flowered milkweed, red milkweed, Cedar Hill milkweed

Scientific Name: *Asclepias lanceolata* Walter

Plant Symbol: ASLA2

Duration: Perennial, herbaceous

Plant Height: 3-5 ft. tall

Blooms/Fruits: May-August

Distinguishing characteristics: Stems usually solitary from rootstock, non-hairy, and with purplish colors on the lower parts of the stem; leaves narrowly lance-shaped, opposite, and at right angles on the stem, the lower 2-3 leaf pairs smaller (up to 1.5 in. long) than the middle and upper leaf pairs (up to 10 in. long); inflorescences few and terminal with 3-8 flowers per umbel inflorescence; flowers with flame red to red-orange reflexed petals and with an orange crown and orange horns in the center.

Pollinator Value: Visited by bumble bees, honey bees, and a variety of butterflies including queens, tiger swallowtails and Palamedes swallowtails.

Habitat: Fresh to brackish marshes, bogs, wet roadside ditches, and wet pineland savannahs

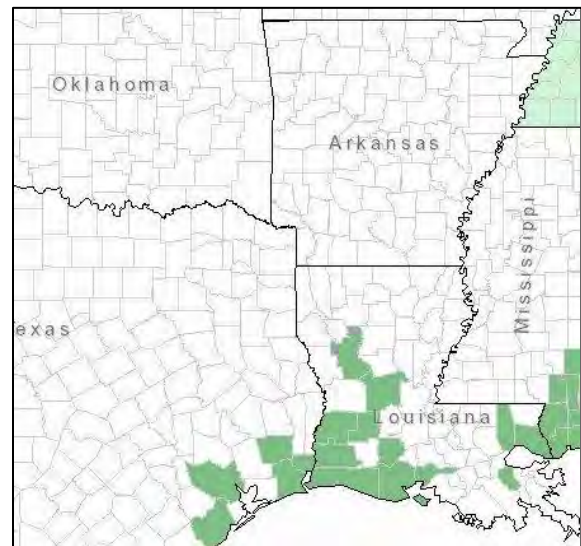


Photo: Sally and Andy Wasowski, Lady Bird Johnson  
Wildflower Center



Close up of flowers

*Photo: Larry Allain, USDA-NRCS Plants Database (right); Alan Cressler, Lady Bird Johnson Wildflower Center (left)*

# Field Thistle

## Aster Family

Other Common Names: roadside thistle

Scientific Name: *Cirsium discolor* (Muhl. Ex Willd.) Speg.

Plant Symbol: CIDI

Duration: Biennial or short-lived Perennial, herbaceous (with thickened taproot)

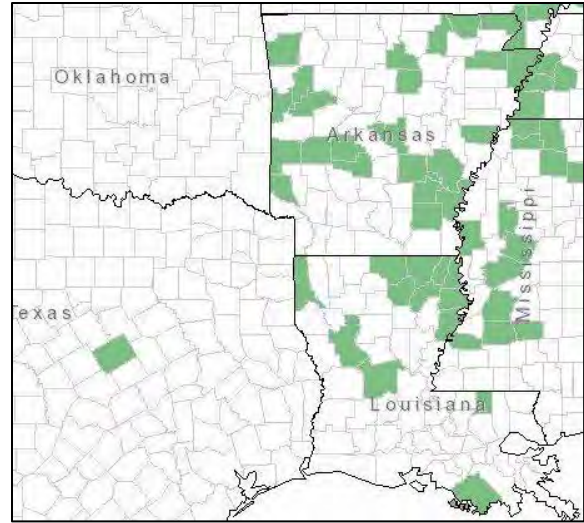
Plant Height: 3-8 ft., erect

Blooms/Fruits: July–November

Distinguishing characteristics: Flower heads solitary on the ends of branches, pinkish to reddish purple in a “cup” of spine-tipped bracts underneath the inflorescence; leaves are deeply dissected more than ½ way from the margin to the midrib, and spiny, the upper surface green and the undersurface densely hairy and appearing white.

Pollinator Value: Pollinator Value: Monarchs observed visiting these flowers in at least six states (Xerces Monarch Nectar Plant Database 2017). Dozens of species of bees, wasps, flies, beetles, butterflies and moths visit this species for nectar and/or pollen (Hilty 2017).

Habitat: Upland prairie, glades, bluffs, old and fallow fields, and openings in dry upland forests.



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Illinois Natural  
History Survey





Full flowering/close-ups of bloom/Stem and leaf



Mature flower and seed

Photos: Albert F.W. Vick, Lady Bird Johnson Wildflower Center

# Giant Ironweed

## Aster Family

Other Common Names: tall ironweed

Scientific Name: *Vernonia gigantea* (Walter) Trel.

Plant Symbol: VEGI

Duration: Perennial, herbaceous

Plant Height: 4-6 feet

Blooms/Fruits: August-October

Distinguishing characteristics: Flower heads in large, open, terminal inflorescences; individual flower heads dark purple, without rays, cylindrical to bell-shaped; leaves alternate on the stem, lance shaped, 6-10 inches long, and tapered at both ends; leaf margins sharply toothed.

Pollinator Value: flowers attract a diverse array of bees and butterflies.

Habitat: Lowland prairie, pastures, stream banks, bottomland forest openings, and roadsides.

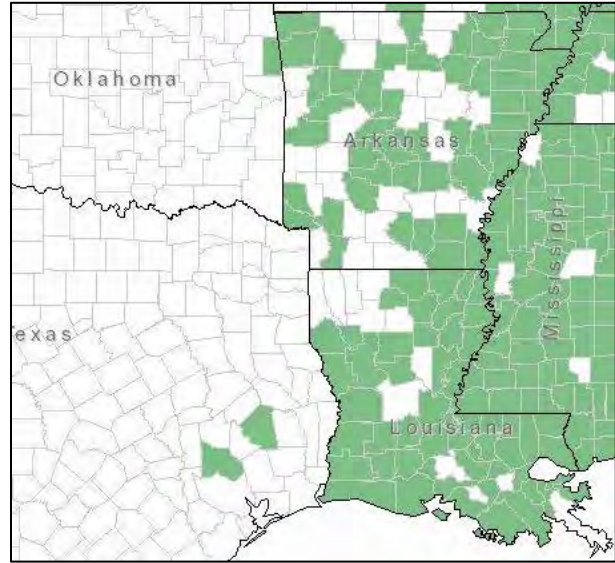
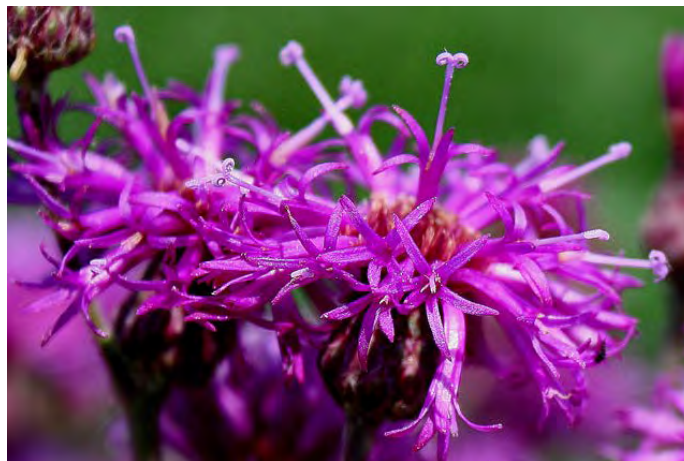


Photo: R.W. Smith, Lady Bird Johnson Wildflower



Leaf and Stem

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



Close up of Flowers

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

# Hairy Leafcup

## Aster Family

Other Common Names: bear's-foot, yellow-flowered leaf cup

Scientific Name: *Smallanthus uvedalius* (L) Mack. Ex Small

Plant Symbol: SMUV

Duration: Perennial, herbaceous

Plant Height: 4 - 9 feet

Blooms/Fruits: July - September

Distinguishing characteristics: Stems tall and branched; leaves opposite on the stem except near the top, large and broad about 8-12 inches long and broad, with 3-5 deep palmate lobes, base of the leaves are winged to the attachment on the stem; flowering heads numerous, daisy-like with yellow rays and yellow centers, borne in loose clusters terminating the branches.

Pollinator Value: believed to be visited on a variety of bees, butterflies and flies.

Habitat: Wooded bottomlands, pastures, meadows, bases of ridges and bluffs, usually in low ground.

Note: A common synonym in older floras is *Polymnia uvedalia* (L.) L.

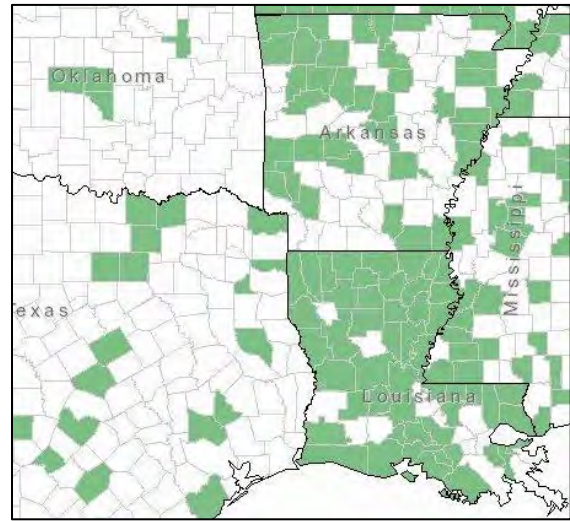


Photo: R.W. Smith, Lady Bird Johnson Wildflower



Close up of blooms and leaf

*Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center; Photo: Stefan Bloodworth, Lady Bird Johnson Wildflower Center; USDA-NRCS Plants database*

# Indian Blanket

## Aster Family

Other Common Names: beach-blanket flower, firewheel, girasol rojo

Scientific Name: *Gaillardia pulchella* Foug.

Plant Symbol: GAPU

Duration: Annual, herbaceous (sometimes persisting)

Plant Height: 1.5-2.0 ft.

Blooms/Fruits: May-August

Distinguishing characteristics: Flower heads with red rays which may be yellow towards the outside edges and centers ranging from dark purple but sometimes yellow; stems upright and branching, leafy throughout; leaves very hairy, oblong to egg-shaped, 1 inch wide by 4 inches long, with little to no leaf stalks

Pollinator Value: flowers visited by butterflies and multiple native bee species, including leaf cutter bees and green metallic sweat bees. Plant is the host for caterpillars of the bordered patch butterfly and two native moth species.

Habitat: Prairies, disturbed areas, roadsides, sandy or calcareous soils.

Note: State flower of Oklahoma. There are three botanical varieties of Indian blanket. *Gaillardia pulchella* var. *pulchella* is the only variety that occurs consistently in all states represented in this guide.

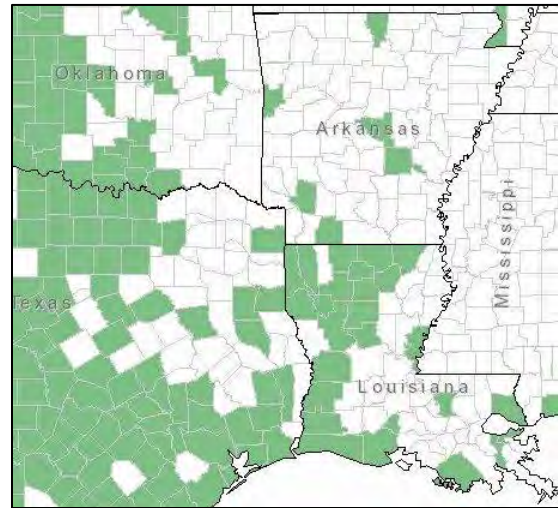
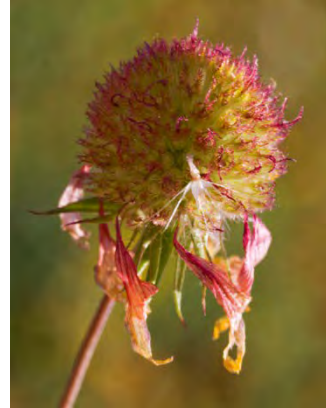


Photo: Melody Lytle, Lady Bird Johnson Wildflower Center



Seed and seedlings

Photo: Bruce Leander, Lady Bird Johnson Wildflower Center; Photo: Center Staff, Lady Bird Johnson Wildflower Center



Early flower development, full bloom, and flower head after rays have fallen

Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center; Kim Yarbrough, Lady Bird Johnson Wildflower Center; Steven Schwartzman, Lady Bird Johnson Wildflower Center



Stem, leaves, and early maturing flowers

Photos: Joseph Marcus, Lady Bird Johnson Wildflower Center; Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

# Joe Pye Weed

## Aster Family

Other Common Names: hollow joepyweed, hollow-stemmed joepyweed, trumpetweed

Scientific Name: *Eutrochium* (=Eupatorium) *fistulosum* (Barratt) E.E. Lamont

Plant Symbol: EUFI14

Duration: Perennial, herbaceous

Plant Height: 3-9+ ft., erect

Blooms/Fruits: July-September

Distinguishing characteristics: Individual flowering heads small, pinkish-purple, in large dome-shaped inflorescences, rays absent; leaves in whorls of 4-7, lance-shaped and finely toothed on the margins; stems purplish or purple blotched throughout, covered with a thin, white-waxy coating (glaucous), and hollow except where the leaves attach (nodes) and the top of the plant.

Pollinator Value: This flower blooms in the summer and is visited by numerous species of pollinator and beneficial insects. It is known to attract butterflies.

Habitat: Wet lowlands, bottomland forests, alluvial woods, along stream and river banks, moist meadows, bogs, marshes, moist pastures, and roadsides.

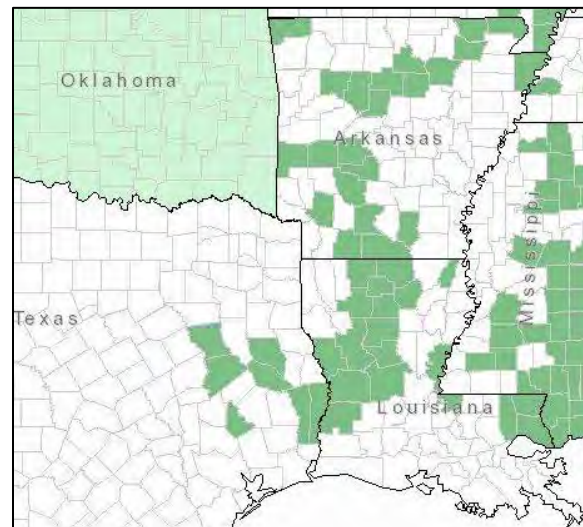


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center





Full flowering/close-up of flowers

*Photo: R.W. Smith, Lady Bird Johnson Wildflower Center; John Hilty, Illinois Wildflowers; Alan Cressler, Lady Bird Johnson Wildflower Center*



Stem and Leaf arrangement

*Photo: John Hilty, Illinois Wildflowers; W.D. and Dolfia Bransford, Lady Bird Johnson Wildflower Center*

# Late Purple Aster

## Aster Family

Other Common Names: spreading aster, purple daisy

Scientific Name: *Symphyotrichum patens* (Aiton) G.L. Nesom

Plant Symbol: SYPA11

Duration: Perennial, herbaceous

Plant Height: 2-4 feet

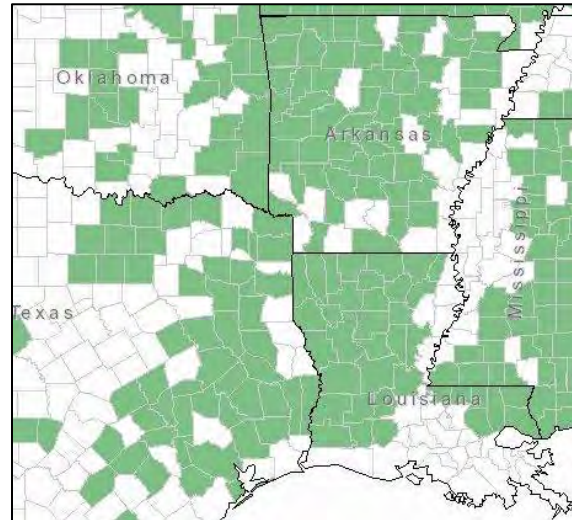
Blooms/Fruits: August-October

Distinguishing characteristics: Stems solitary or a few from a branched rootstock, stems branch in the upper half and are usually leafless on the lower half when in flower; leaves on the upper half of the stem have leaf bases that strongly clasp the stem, lance shaped, 2-3 inches long and 1-1.5 inches wide but generally reduced in size moving up the stem; flowering heads daisy-like, 1-1.5 inches across with blue rays and a yellow center.

Pollinator Value: visited by butterflies and variety of bee genera including *Apis*, *Bombus*, *Ceratina*, *Xylocopa*, and more.

Habitat: Glades, prairies, mesic to upland forests, old fields, railroads, and roadsides, usually on acidic substrates.

Note: Three varieties occur within this region. *Symphyotrichum patens* var. *patens* is the most common within our Gulf region; however, *S. p.* var. *gracile* and *S. p.* var. *patentissimum* occur here as well. The distribution map is the combined distribution of all three varieties.





Full Flowering/Close-Up of Blooms

Photo: Mike Haddock; Mike Haddock; Janice Lynn, Lady Bird Johnson Wildflower Center



Stem and Leaf Arrangement

Photos: Mike Haddock

# Lateflowering Thoroughwort

## 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.

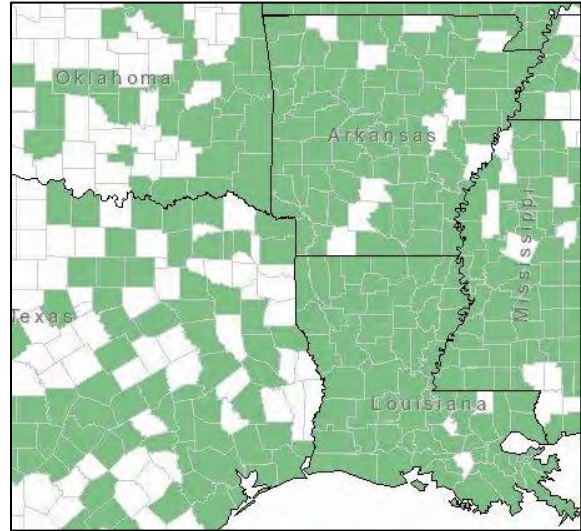


Photo: Robert Stone, Lady Bird Johnson Wildflower Center



Flowering/Close Up of Flowers

*Photos: Steven Schwartzman, Lady Bird Johnson Wildflower Center; Bruce Leander, Lady Bird Johnson Wildflower Center*



Stem and Leaf Arrangement

*Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center; Carl Fabre, Lady Bird Johnson Wildflower Center*

# Pennsylvania Smartweed

## 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

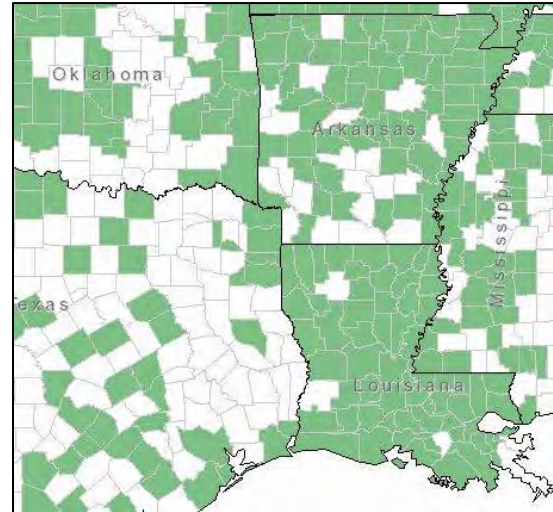
Blooms/Fruits: May–November

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.





Seeds and flowers

*Photos: © Steve Eggers, USACE; R.W. Smith, Lady Bird Johnson Wildflower Center*

# Pinkscale Blazing Star

## Aster Family

Other Common Names: blazing star, handsome blazing star

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

Plant Symbol: LIEL

Duration: Perennial

Growth Habit: Forb/herb

Plant Height: 2-4 ft.

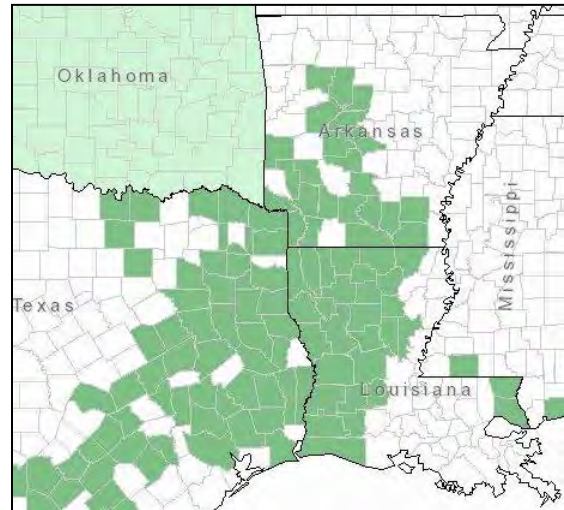
Blooms/Fruits: August-October

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.

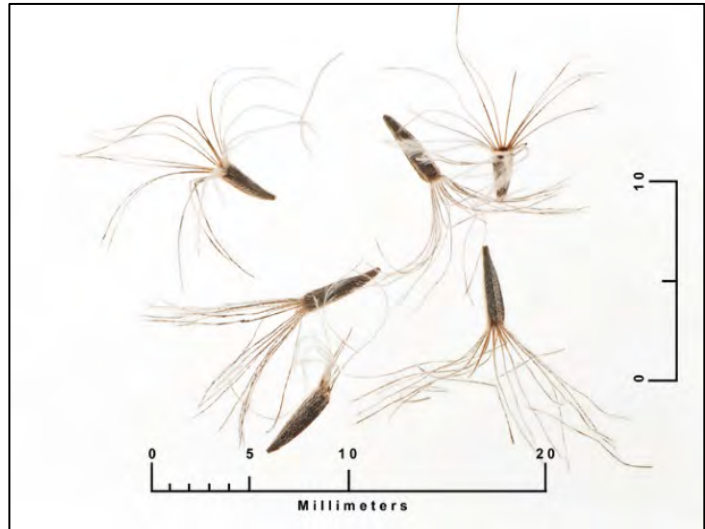
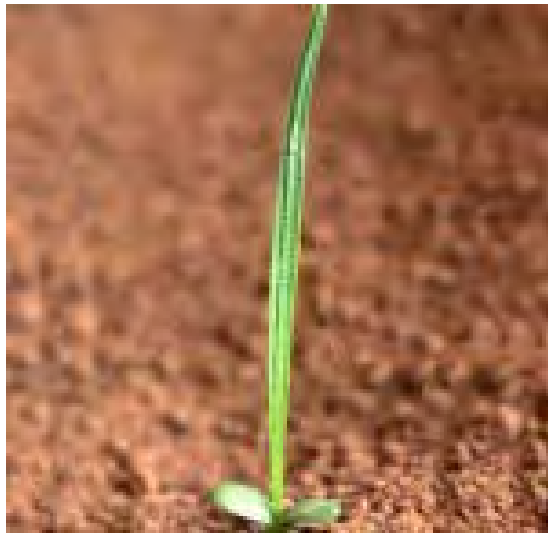






Flowering

*Photo: Campbell and Lynn Loughmiller Lady Bird Johnson Wildflower Center; W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center*



Seedling and Seeds

*Photo: USDA-NRCS; Bruce Leander Lady Bird Johnson Wildflower Center*

# Prairie Blazing Star

## 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

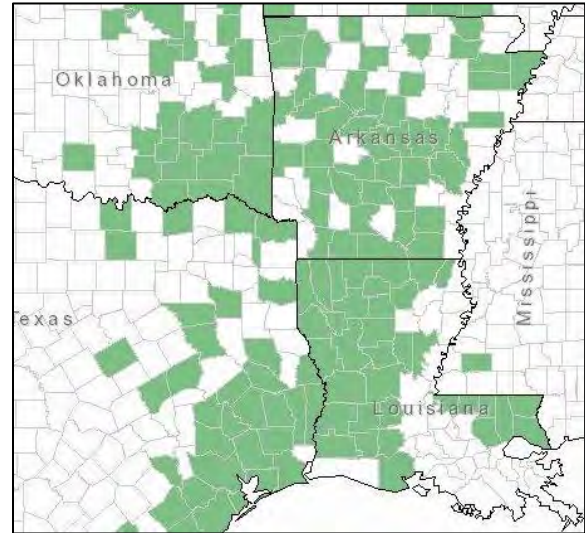
Duration: Perennial, herbaceous (from a rounded corm)

Plant Height: 2-5 ft., erect

Blooms/Fruits: July–October

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. 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/Mature Plant



Stem and leaf/Close up of flowers

Photos: © 2007 K. Chayka (right); Mike Haddock (left)

# Purple Prairie Coneflower

## Aster Family

Other Common Names: pale echinacea, pale coneflower

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

Plant Symbol: ECPA

Duration: Perennial, herbaceous

Blooms/Fruits: May–June

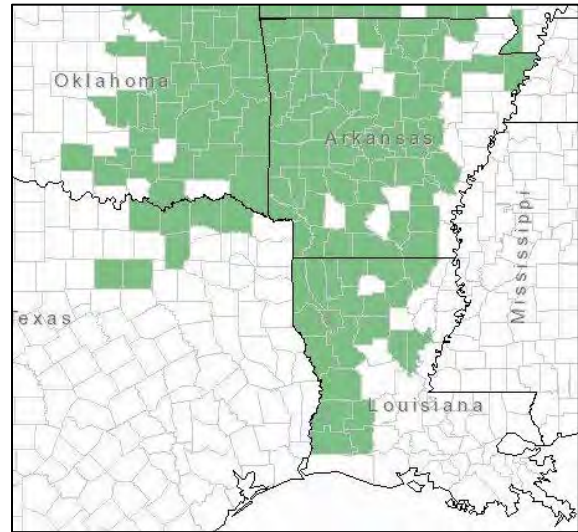
Plant Height: 3–5 ft., erect

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.

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.





Full Flowering/Leaf Arrangement

Photo: Johnny Johnson, Lady Bird Johnson Wildflower Center



Blooms, leaf, and mature coneflower

Photo: Johnny Johnson, Lady Bird Johnson Wildflower Center

# Roundleaf Ragwort

## 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.

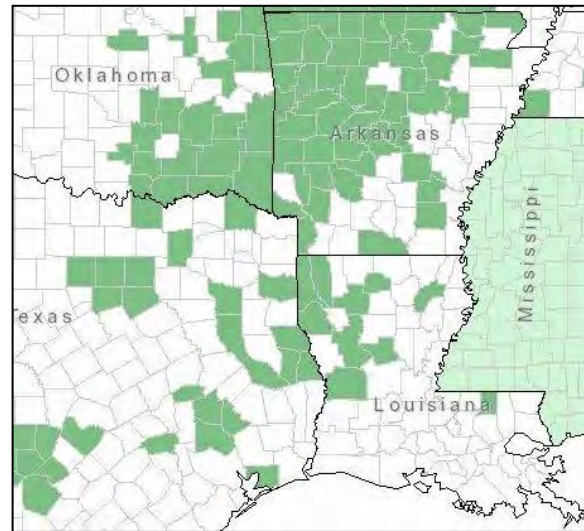
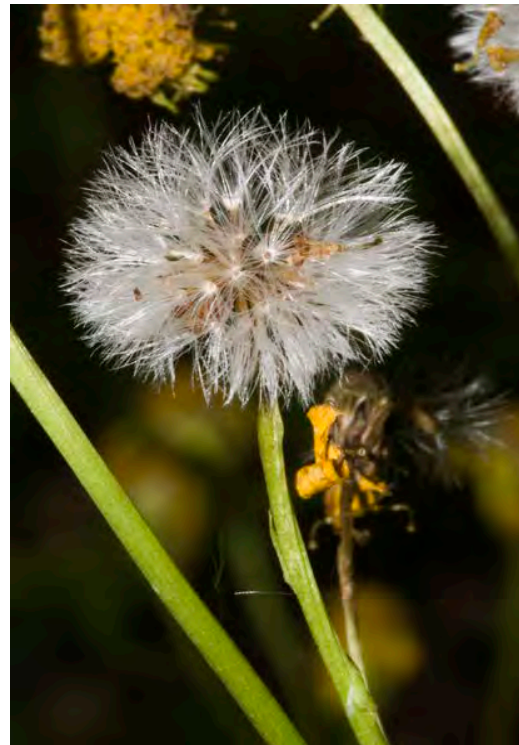


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Close up of flowers

*Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center*



Leaf shape/Mature Plant with seed

*Photo: Janice Lynn, Lady Bird Johnson Wildflower Center; Steven Schwartzman, Lady Bird Johnson Wildflower Center*

# Seaside Goldenrod

## Aster Family

Other Common Names: salt-marsh goldenrod

Scientific Name: *Solidago sempervirens* L.

Plant Symbol: SOSE

Duration: Perennial, herbaceous

Plant Height: 6 feet

Blooms/Fruits: August–November

Distinguishing characteristics: Flower heads clustered in terminal inflorescences, the individual inflorescence branches arching backwards; each head with yellow rays and yellow centers, ¼ inch across; leaves generally without hairs, fleshy and somewhat succulent, in basal rosettes and branched, upright leafy stems, largest leaves basal and reducing in size up the stem.

Pollinator Value: thought to be visited by a variety of bees, butterflies and flies.

Habitat: Costal dunes, marsh and estuary shores, dunal blowouts.

Note: NRCS Cape May, NJ Plant Material Center selected as a source of seaside goldenrod referred to as Monarch Germplasm for the Mid-Atlantic region.

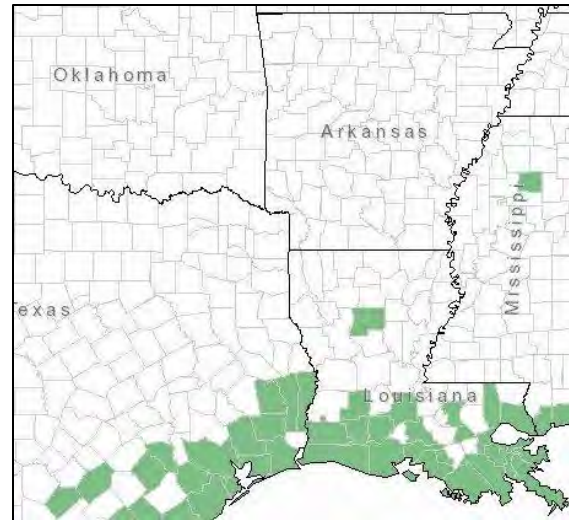


Photo: USDA-NRCS





Flowering/Close Up of Flowers

Photos: Peggy Romfh, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center (lower left)



Stem and leaf/Seed

Photos: Peggy Romfh, Lady Bird Johnson Wildflower Center; Bruce Leander, Lady Bird Johnson Wildflower Center

# Showy Goldenrod

## Aster Family

Other Common Names: prairie goldenrod, showy-wand goldenrod

Scientific Name: *Solidago speciosa* Nutt.

Plant Symbol: SOSP2

Duration: Perennial, herbaceous

Plant Height: 2-5 ft., erect

Blooms/Fruits: August–November

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.

Pollinator Value: This flower is very 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.

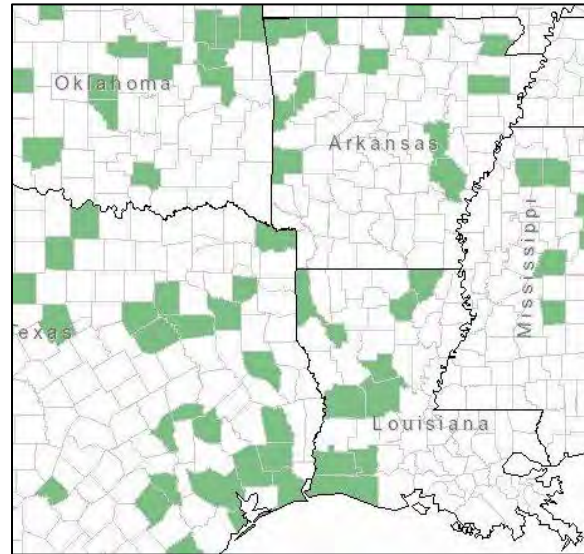


Photo: Sally and Andy Wasowski, Lady Bird



Close up of flowers

*Photos: R.W. Smit, Lady Bird Johnson Wildflower Center*



Mature plant/Leaf

*Photo: John Hilty, Illinois Wildflowers*

# Smooth Oxeye

## Aster Family

Other Common Names: oxeye sunflower, false sunflower

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

Plant Symbol: HEHE5

Duration: Perennial, herbaceous (from creeping rhizomes)

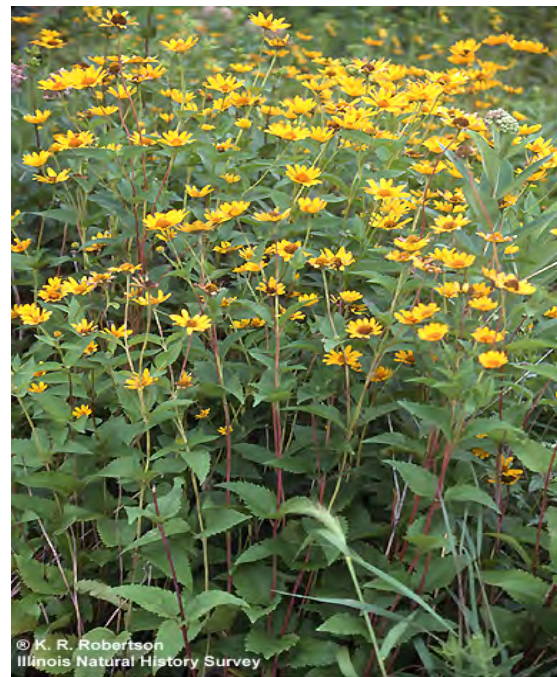
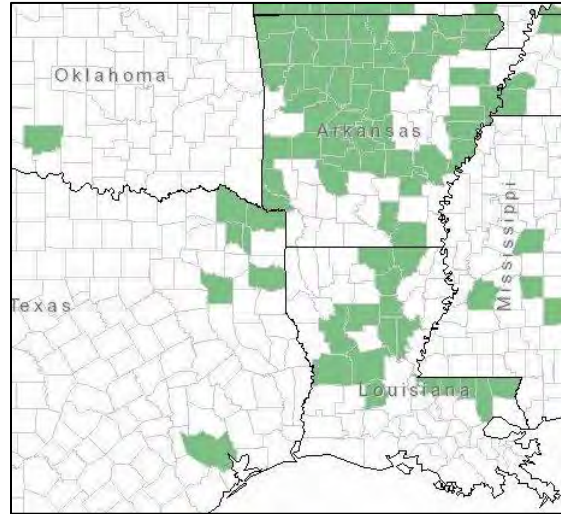
Plant Height: 3-5 ft., erect

Blooms/Fruits: June–September

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.

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



Stem/Flowers

Photos: R.W. Smith, Lady Bird Johnson Wildflower Center; Julie Makin, Lady Bird Johnson Wildflower Center; John Hilty, Illinois Wildflowers



Flowering/Mature plant

Photos: Robert Stone, Lady Bird Johnson Wildflower Center; John Hilty, Illinois Wildflowers

# Sneezeweed

## 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 .

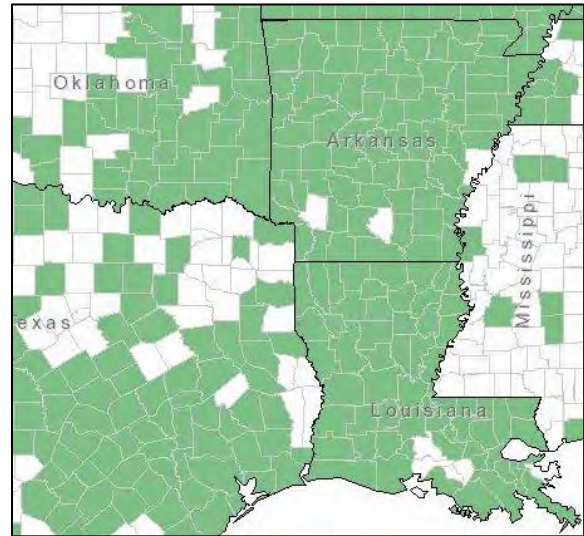
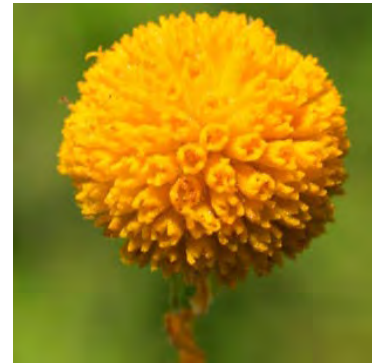


Photo: Andy and Sally Wasowski, Lady Bird Johnson



Early seed maturity/Flowering

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



Very narrow leaves (thread like)/Flower head after rays fallen/Note 3 lobes per ray

Photos: Steven Schwartzman, Lady Bird Johnson Wildflower Center; Bruce Leander, Lady Bird Johnson Wildflower Center

# Spider Milkweed

## Milkweed Family

Other Common Names: green milkweed, Ozark milkweed, Green Antelopehorn

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 (Baum and Mueller 2015). This plant is 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 erect.

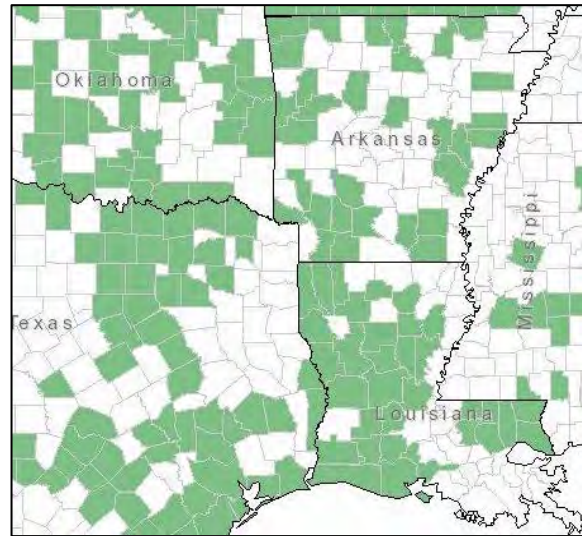


Photo: Sandy Smith, Lady Bird Johnson Wildflower Center





Flower/Leaf and stem/Flower buds

*Photo: Alan Cressler, Lady Bird Johnson Wildflower Center; Marilyn McBroom Knight Lady Bird Johnson Wildflower Center; Steven Schwartzman Lady Bird Johnson Wildflower Center*



Fruit/Mature fruit and seed

*Photos: Carolyn Fannon, Lady Bird Johnson Wildflower Center*

# Spotted Beebalm

## Mint Family

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

Scientific Name: *Monarda punctata* L.

Plant Symbol: MOPU

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

Plant Height: 1-2 ft., erect

Blooms/Fruits: June-September

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.

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

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

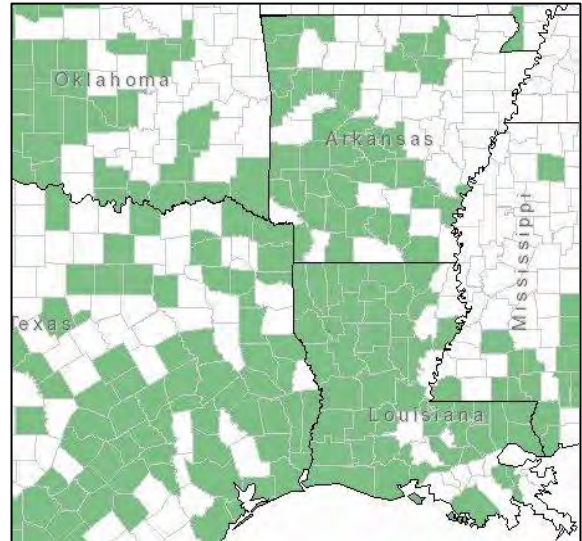


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center



Full flowering/close-up of blooms

Photo: Kimberly Kline, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center; Norman Flaigg, Lady Bird Johnson Wildflower Center



Stem and leaf arrangement/ close-up of leaf

Photo: W.D. and Dolphia Bransford, Lady Bird Wildflower Center; John Hilty, Illinois Wildflowers

# Swamp Milkweed

## Milkweed Family

Other Common Names: rose milkweed, pleurisy root, white Indian hemp

Scientific Name: *Asclepias incarnata* L.

Plant Symbol: ASIN

Duration: Perennial, herbaceous

Plant Height: 2-6 ft., erect

Blooms/Fruits: June–October

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.

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

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

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

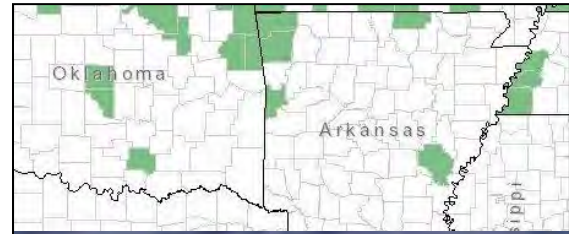


Photo: Jennifer Anderson ©



Fruit/Leaf Arrangement

*Photo: Steve Eggers, USACE; Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center*



Flowers/Seeds

*Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center; Bruce Leander, Lady Bird Johnson Wildflower Center*

# Swamp Sunflower

## Aster Family

Other Common Names: narrowleaf sunflower, narrow-leaved sunflower

Scientific Name: *Helianthus angustifolius* L.

Plant Symbol: HEAN2

Duration: Perennial, herbaceous

Plant Height: 2.5-5 ft.

Blooms/Fruits: September-October

Distinguishing characteristics: Stems usually solitary with many, sessile, alternately arranged, narrow leaves, 4-7 in. long by ¼ in. wide; inflorescence is terminal with a few long-stalked flower heads; flower heads daisy-like with yellow with 10-20 rays and a dark purple to reddish-brown center disc.

Pollinator Value: visited by butterflies, andrenid bees and perhaps others. Also serves as host to three butterfly species.

Habitat: Moist to wet habitats, prairies, sand prairies, savannahs, pastures, and roadside ditches.

Note: Swamp sunflower is somewhat similar in appearance to Maximillian sunflower. Swamp sunflower can be identified having more narrow leaves, leaves that are not folded into a “v” but are flat with the margins rolled under. In addition, swamp sunflower has a dark center in its flower heads while Maximillian sunflower has a yellow center.

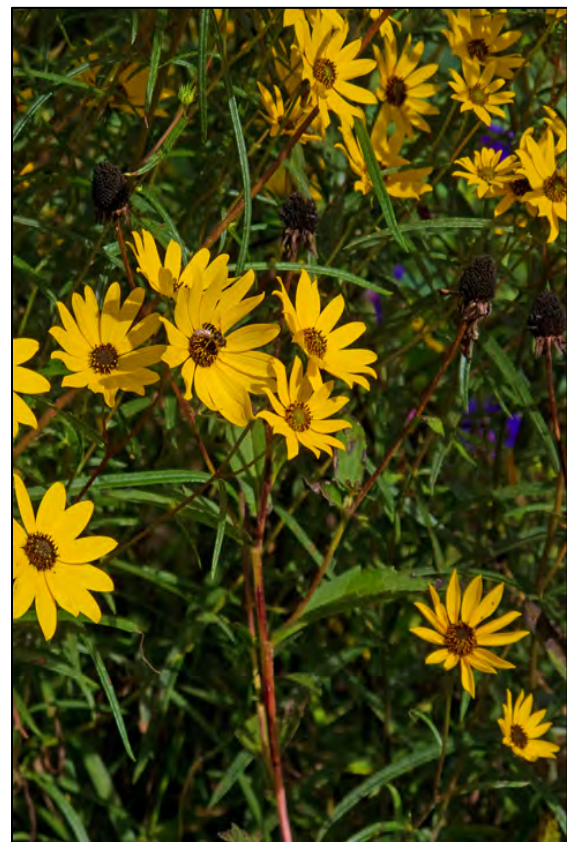
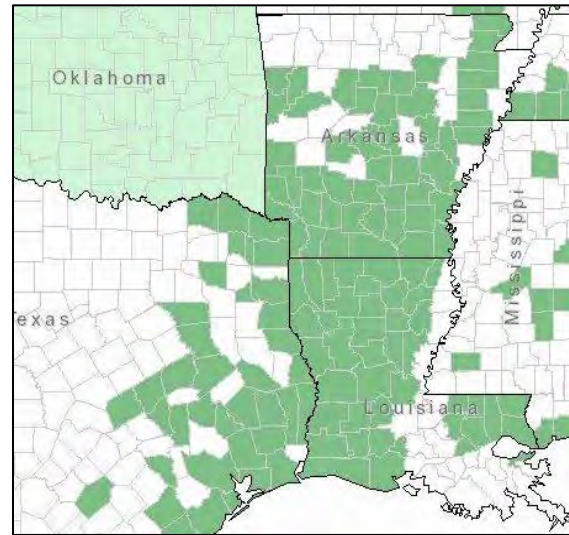


Photo courtesy of : Stephanie Brundage, Lady Bird Johnson Wildflower Center



Full flowering/close-up of blooms

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



Note the narrow leaf blades and arrangement

# Sweetscent

## Aster Family

Other Common Names: saltmarsh fleabane, purple Plucheas, canela.

Scientific Name: *Pluchea odorata* (L.) Cass.

Plant Symbol: PLOD

Duration: Annual; herbaceous, but the bases may become woody and persistent.

Plant Height: 2-4 ft.

Blooms/Fruits: May-October

Distinguishing characteristics: Stems erect with glandular hairs throughout the mid-sections and upper parts; leaves alternate on the stem, 3-6 in. long x 2-3 in. wide, widely egg-shaped with serrated margins; leaf surfaces with glands which are strongly scented when crushed; flowers in congested, terminal, flat topped inflorescences; individual flower heads powder-puff like and rose-pink.

Pollinator Value: Flowers attract a variety of bees and butterflies, including bumble bees, queens, pearl crescents, and gray hairstreaks.

Habitat: Salt and brackish marshes along the coast, inland marshes, springs wet roadside ditches, and other wet areas.

Note: Two varieties of *Pluchea odorata* occur in the US. *Pluchea odorata* var. *odorata* occurs in the Western Gulf region. *Pluchea odorata* var. *succulenta* does not. It occurs in the northeast and Midwest. Three other species of *Pluchea* also occur in the Western Gulf region: *P. camphorata*, *P. foetida* and *P. rosea*.

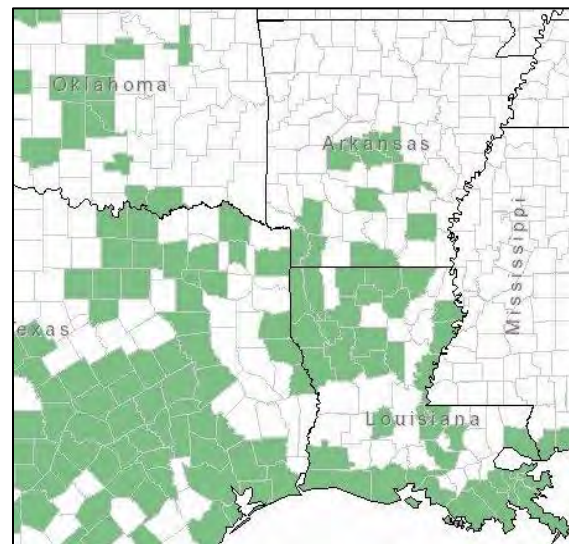


Photo: Mike Haddock





Full flowering/close-up of bloom

*Photos: Harry Cliffe, Lady Bird Johnson Wildflower Center; Mike Haddock; Joseph Marcus, Lady Bird Johnson Wildflower Center*



Leaf shape and arrangement

*Photo: R.W. Smith, Lady Bird Johnson Wildflower Center; Mike Haddock*

# Tall Blazing Star

## Aster Family

Other Common Names: rough gayfeather

Scientific Name: *Liatris aspera* Michx.

Plant Symbol: LIAS

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

Height: 2-4 ft., erect

Blooms/Fruits: August–November

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.

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 is distinguished from others by having the bracts under the flower heads with thin, transparent margins, which 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.

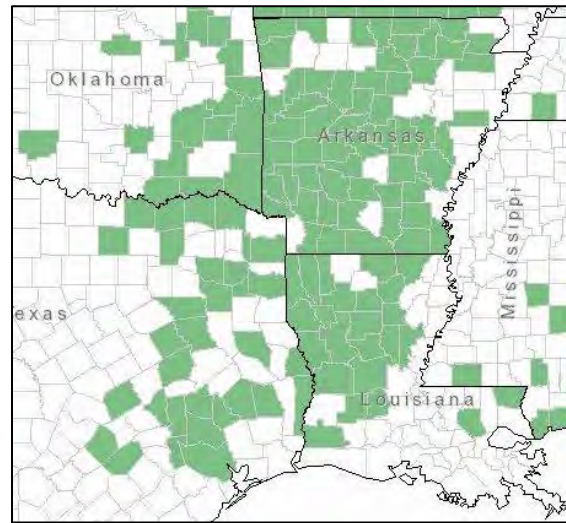
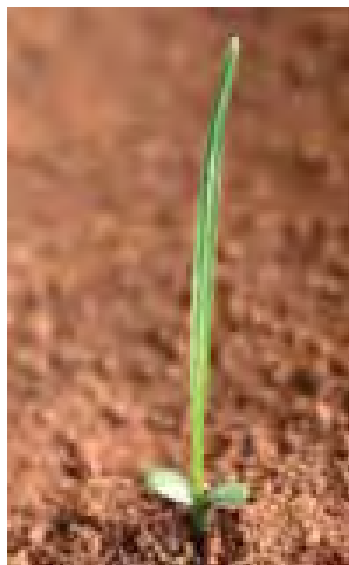


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center



Full flowering/close-up of blooms

Photos: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center (bottom right)



Mature Plant/Seedlings

Photos: USDA-NRCS

# Tall Goldenrod

## Aster Family

Other Common Names: Canada Goldenrod, late goldenrod

Scientific Name: *Solidago altissima* L.

Plant Symbol: SOAL6

Duration: Perennial, herbaceous

Plant Height: 3-6 feet.

Blooms/Fruits: August–November

Distinguishing characteristics: Stems 1–several from rhizomes, leafy throughout, and with several fine, longitudinal lines or grooves along the stem; leaves narrow, widest near the top or middle (4–5 inches long by 1 inch wide), and with 3 prominent veins; inflorescence terminal and generally overall pyramid shaped; individual flowering heads all upright on the recurving flowering branches, small, with 10–16 yellow rays and 3–7 yellow disc flowers in the centers.

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

Habitat: Upland prairies, old fields, pastures, roadsides, and disturbed areas. Fairly common throughout its range.

Note: A similar species (*Solidago canadensis*) also goes by the common name Canada goldenrod. That species has smaller individual flower heads, and fewer ray (6–12) and disc (2–5) flowers.

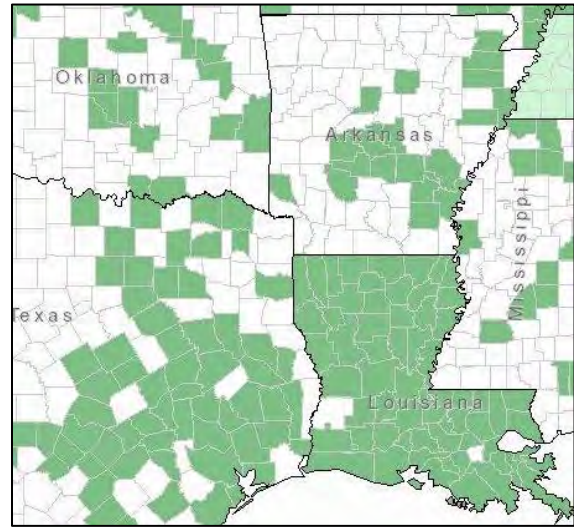


Photo: Norman Flaigg, Lady Bird Johnson Wildflower



Full flowering/close-up of blooms

Photos (clockwise): Melody Lytle, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center; Janice Lynn, Lady Bird Johnson Wildflower Center



Mature plant/Leaf arrangement

Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center; Janice Lynn, Lady Bird Johnson Wildflower Center

# Texas Ironweed

## Aster Family

Other Common Names:

Scientific Name: *Vernonia texana* (A. Gray) Small

Plant Symbol: VETE3

Duration: Perennial, herbaceous

Plant Height: 2-3 feet

Blooms/Fruits: June–August

Distinguishing characteristics: Stems erect and leafy throughout; leaves alternate on the stem, widely lance-shaped, 8-10 inches long by 2-3 inches wide near the base; inflorescence terminal, open, and with numerous flowering heads; flower heads powder-puff like with only disc flowers, purple to pinkish-purple, pink, to rarely white.

Pollinator Value: Little is known. Probably used by a variety of bees and butterflies.

Habitat: Sandy woods, pinelands, scrub-oak woodlands

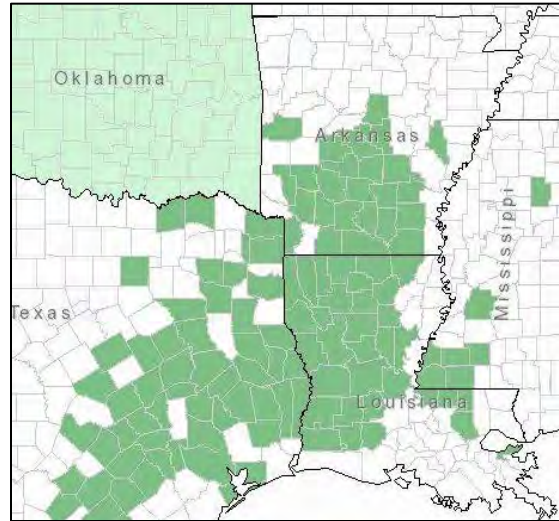


Photo: Robert Stone, Lady Bird Johnson Wildflower



Full flowering/close-up of blooms

Photos: Robert Stone, Lady Bird Johnson Wildflower Center; Brenda K. Loveless, Lady Bird Johnson Wildflower Center; Carolyn Fannon, Lady Bird Johnson Wildflower Center



Close-up of foliage

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

# Texas Vervain

## 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.

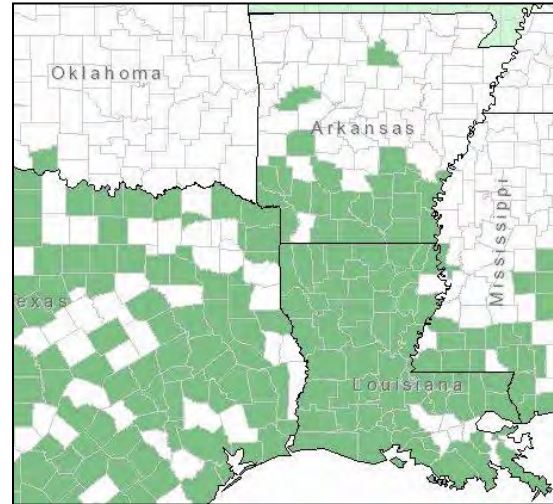


Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center





Flowering/close-up of flower

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



Habitat/Seed

Photo: Robert Stone, Lady Bird Johnson Wildflower Center; Bruce Leander, Lady Bird Johnson Wildflower Center

# White Crownbeard

## Aster Family

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

Scientific Name: *Verbesina virginica* L.

Plant Symbol: VEVI3

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.

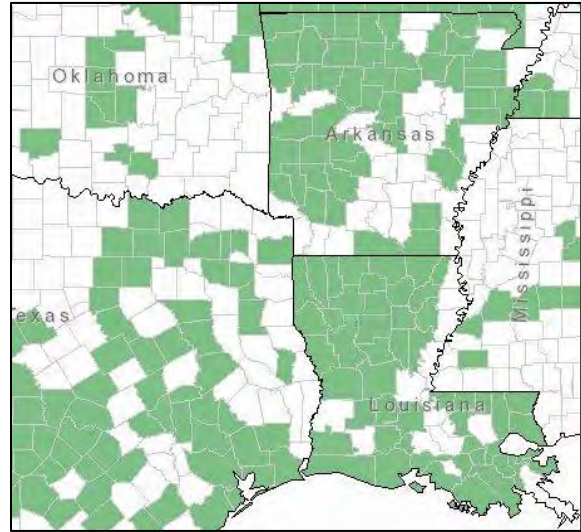


Photo: Marcus Joseph, Lady Bird Johnson Wildflower



Seedling (note winged stem)/Flowering

*Photos: Joseph Marcus, Lady Bird Johnson Wildflower Center*



Winged stem/Ice ribbon around stem

*Photos: Marcus Joseph, Lady Bird Johnson Wildflower Center*

# Wholeleaf Rosinweed

## Aster Family

Other Common Names: entire-leaf rosinweed, rosinweed

Scientific Name: *Silphium integrifolium* Michx.

Plant Symbol: SLIN2

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

Plant Height: 2-6 ft., erect

Blooms/Fruits: July-September

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.

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.

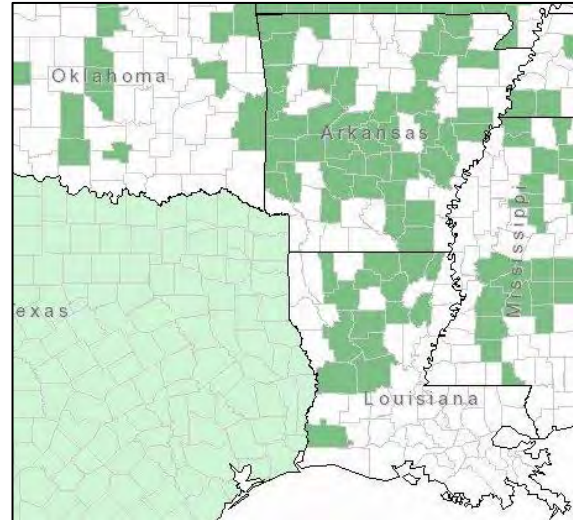


Photo: 2001 © Peter Dziuk



Close-up of flowers and base of flower

*Photo: John Hilty, Illinois Wildflowers*



Vegetative growth and close-up of stem and leaf

# Wild Bergamot

## Mint Family

Other Common Names: beebalm

Scientific Name: *Monarda fistulosa* L.

Plant Symbol: MOFI

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

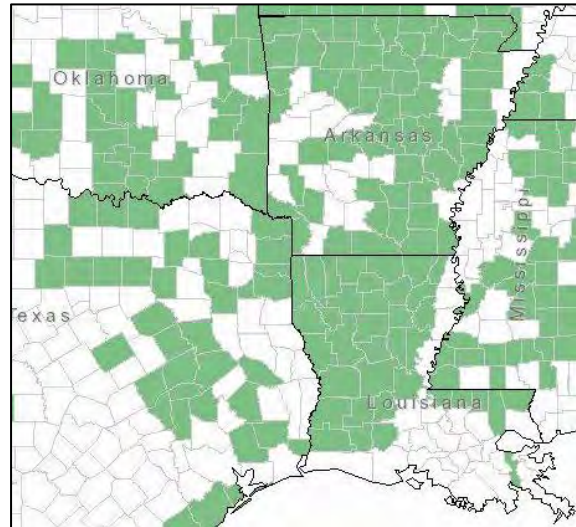
Plant Height: 1.5-4 ft., erect

Blooms/Fruits: May-September

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.

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.



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Illinois Natural History Survey



Full flowering/close-up of blooms

*Photos: Thomas Muller, Lady Bird Johnson Wildflower Center; Eric Beckers, Lady Bird Johnson Wildflower Center; Alan Cressler, Lady Bird Johnson Wildflower Center*



Flower bud/Foliage

*Photos: Sandy Smith, Lady Bird Johnson Wildflower Center; W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center*

# Wild Blue Phlox

## Phlox Family

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

Scientific Name: *Phlox divaricata* L.

Plant Symbol: PHDI

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

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

Blooms/Fruits: April-June

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.

Pollinator Value: This flower is a spring nectar source to butterflies. It is also popular with long-tongued bees.

Habitat: Bottomland and upland forests, and moist woodlands.

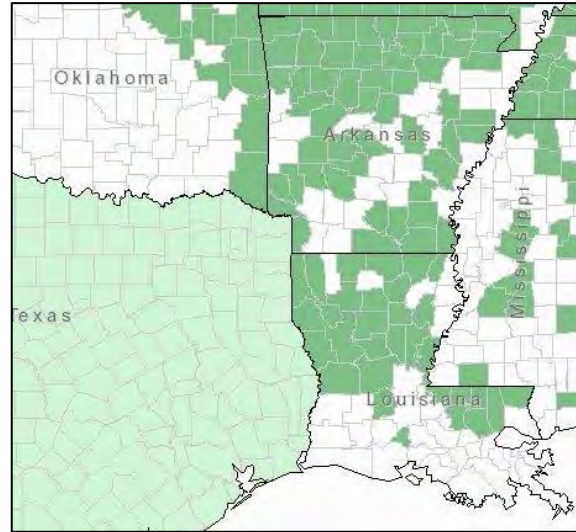


Photo: Mike Haddock





Full flowering/Close-up of blooms

Photos: Mike Haddock; ©2011 Katy Chayka (bottom right)



Close up of leaf/Habitat

Photo: Mike Haddock

# Willowleaf Aster

## Aster Family

Other Common Names: willow aster, tall aster

Scientific Name: *Symphotrichum praealtum*  
(Poir.) G. L. Nesom

Plant Symbol: SYPR5

Duration: Perennial, herbaceous

Plant Height: 3-5 ft.

Blooms/Fruits: August–November

Distinguishing characteristics: Stems erect, branched above the midpoint, often colonial from long, branched rhizomes; leaves sessile on the stem, 3 in. long by 1 in. wide, widest near the top of the leaf, lower leaves absent at flowering, leaf size gradually diminishes from the middle of the stem towards the top; inflorescence with numerous daisy-like heads; flowering heads with numerous purple to bluish-purple rays and a yellow disk.

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

Habitat: Bottomland prairies, moist depressions, river and stream banks, wet roadside ditches, and open disturbed areas.

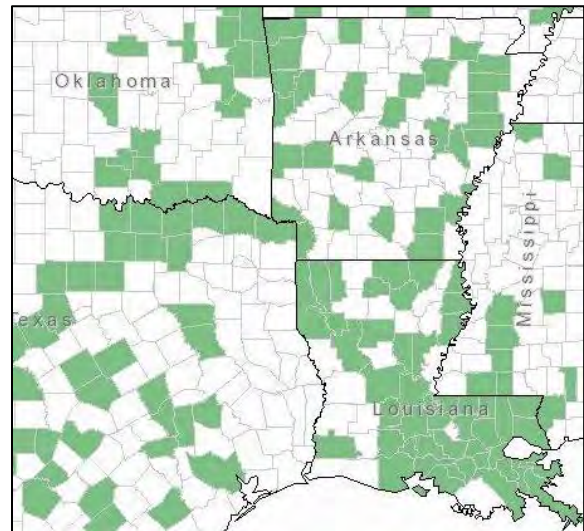


Photo: Janice Lynn, Lady Bird Johnson Wildflower



Flowering/Leaves

*Photos: Janice Lynn, Lady Bird Johnson Wildflower Center; R.W. Smith, Lady Bird Johnson Wildflower Center (top right)*



Flower buds/Stem

*Photo: R.W. Smith, Lady Bird Johnson Wildflower Center; Joseph Marcus, Lady Bird Johnson Wildflower Center*

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