



United States Department of Agriculture

# Important Plants of the Monarch Butterfly (*Danaus plexippus*)



An Appendix to the USDA-Natural Resources Conservation Service  
Wildlife Habitat Evaluation Guide and Planning Tool - Southern Great Plains Edition

*Helping People Help the Land*

## Important Plants of the Monarch Butterfly

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## Preface

The Monarch Wildlife Habitat Evaluation Guide (WHEG) 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.

The ratings are used to recommend monarch habitat improvement alternatives for each assessment area, and to predict outcomes (improvement of ratings following implementation of alternatives).

An essential function of the Monarch WHEG is inventorying the current plant community. This information is used to develop habitat improvement alternatives. If the existing herbaceous community is inventoried with the belt transect method, then identification of key monarch plant species is required in order to make informed decisions on whether existing habitat is adequate. If inadequate, the WHEG will direct the planner to the conservation practices needed to create desirable breeding or nectaring habitat for the monarch. In this appendix there are three different technical support documents to assist staff in Kansas, Oklahoma and Texas in making these informed decisions.

- [Monarch Planting List](#) of key plant species for establishment of quality monarch habitat
- [Monarch WHEG List](#) for inventorying the existing plant community
- [Plant Identification Guide](#) for identifying key plants on the lists

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## Introduction

A proper understanding of the feeding behavior of the monarch butterfly (*Danaus plexippus*) and its preferred nectar plants is essential to conducting an evaluation of monarch habitat. The data obtained during the application of the Monarch butterfly Wildlife Habitat Evaluation Guide (WHEG) will be used to develop habitat development alternatives for eventual presentation to the decision maker. The information offered here will assist in steps 3-6 of the Conservation Planning process (NRCS 2014).

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



Photo: Anne Stine, Xerces Society

Figure 1: Monarch butterfly nectaring on blue mistflower (*Conoclinium coelestinum*)

Larval Monarch Feeding Behavior: Immature, free living instars (caterpillars) of the monarch butterfly are obligate specialists on the leaves of some species (primarily within the genus *Asclepias*) of milkweed. It is through this ingestion of milkweed foliage as larvae that monarch butterflies gain the toxic cardenolides which deter predation (Roeske et al. 1976) by birds and mammals.

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) to extract nectar near the surface of the flower (Krenn 2010). A feeding monarch perches on a flower and then moves their proboscis around finding nectar from different locations (Figure 1). For this reason, monarchs prefer plants that have relatively flat surfaces (sunflowers) or long multi-flowering inflorescences (gayfeather), where the nectar is easily accessed. In reviewing the 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. In contrast, deep tubular flowers such as honeysuckles (*Lonicera* spp.) and many legumes are not used by monarchs.

Migration and Nectaring: In the fall, eastern U.S. monarchs migrate long distances from across their natal range to their overwintering locations in Mexico (Brower 1995). In many ways, the biology of this migration remains a mystery, but most research suggests that 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 Pallette 1979). Brower et al. (2006) suggests that monarchs do not prepare for this long migration by storing energy (lipids), as these lipids would increase body mass and reduce flight efficiency. Rather, they consume only enough nectar to support the migration. As they near the overwintering locations in Mexico, they significantly increase lipid consumption to build energy reserves essential for their long dormant period (November-March) when they are exposed to cold and wet

conditions but do not feed. Accordingly, late-season nectar sources of the southern Great Plains are considered of critical importance for wintering survival (Brower et al. 2012).

This document provides two species lists and a plant identification guide for use by conservation planners.

- **Monarch WHEG List:** The first list is for use by conservation planners in the application of the resource assessment portion of the *Monarch Wildlife Habitat Evaluation Guide: Southern Great Plains edition*. This process requires identifying and inventorying vegetation. 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* group.
- **Monarch Planting List:** The second list is used in making planting recommendations for improvement of monarch habitat. For all planting recommendations, at least 60% of the seeds pure live seed (PLS) in the forb component should come from this list.
- **Plant Identification Guide:** The guide contains identification sheets of plants in the WHEG and planting list. The guides are organized alphabetically by common name used by the USDA-NRCS PLANTS Database (<http://plants.usda.gov>).

The species included in these two plant lists were developed from a review of the literature and from personal observations of many field biologists. Plant species which were reported to be of outstanding value to the monarch were rated as “very high”, 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. Recommended plants which were commercially unavailable were left off the planting list. Some trees (*Cercis canadensis*) and shrubs (*Cephalanthus occidentalis*, *Baccharis* spp., and *Rhus* spp.) provide excellent nectar sources to the monarch. However, because the primary opportunity for habitat improvement occurs on grasslands in this region, the lists are limited to herbaceous species.

If the application of the WHEG identifies a deficiency of milkweed on grazing lands, NRCS will provide alternatives that will increase the frequency and/or density of native milkweed primarily through implementation of NRCS conservation management practices (e.g. 314-Brush Management, 528-Prescribed Grazing and 338-Prescribed Burning). If there are few to no milkweed (*Asclepias* spp.) plants in or near the assessment area, incorporation of native milkweed seed may warrant consideration<sup>1</sup>. If planting of perennial nectaring species (with or without milkweed) is deemed appropriate, implementation of National Conservation Practices Range Planting (550) or Conservation Cover (327) will be used. If the establishment of annual nectaring species is selected by the client, National Conservation Practice Standard Upland Wildlife Management (645) will be used.

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<sup>1</sup> Milkweed seed is less readily available for purchase in the southern Great Plains than in other parts of the monarch migratory corridor. Availability and costs can prohibit inclusion of milkweed adapted to the assessment area.

Milkweeds (*Asclepias* spp.) (Figure 2): The occurrence of the three most common milkweeds in this edition are 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 (*Asclepias oenotheroides*), also called side-cluster milkweed, thrives in areas with low vegetation (routinely mowed or heavily grazed), and is more common in the south central portion of the southern Great Plains. Based on an inventory by Calvert (1999), *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 deep loamy, 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 and/or calcareous soils, the opportunities for the use of this plant is limited within the southern Great Plains. The species of milkweed with the greatest abundance and distribution in the Midwestern U.S is common milkweed (*A. syriaca*). Seeds of common milkweed are commercially available, but it's occurrence in the southern Great Plains is primarily limited to eastern Kansas and northeastern Oklahoma. Common milkweed is virtually non-existent in Texas. Planting of the non-native tropical milkweed (*Asclepias curassavica*) is not recommended and shall not be included in any NRCS seeding mix recommendations.



Figure 2: *Asclepias asperula*, a milkweed common to Texas in areas with shallow limestone soils.

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## American Star-thistle

## Aster Family

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

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

**Plant Symbol:** CEAM2

**Family:** Asteraceae

**Duration:** Annual

**Growth Habit:** Forb/herb

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

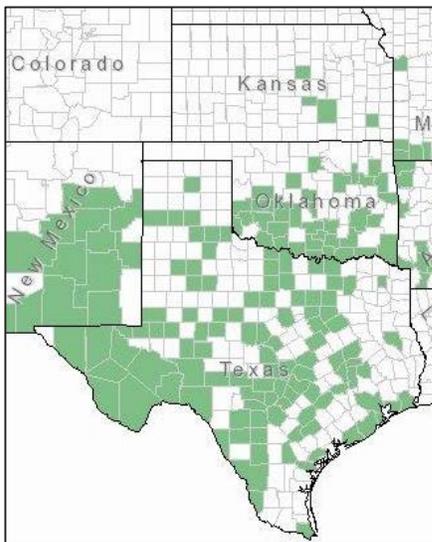
**Blooms/Fruits:** May - June

**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).

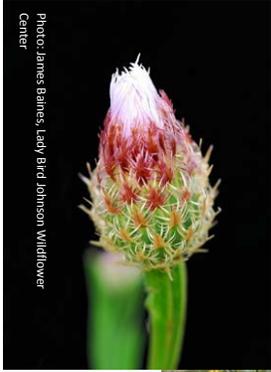
**Pollinator Value:** This flower provides high quality to nectar to many types of bees and butterflies.

**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.



# Important Plants of the Monarch Butterfly



Close-up of flower



Flower bud/full flowering/spent flower



Leaf arrangement



Mature

## Azure Blue Sage

## Mint Family

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

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

**Plant Symbol:** SAAZ

**Family:** Lamiaceae

**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.

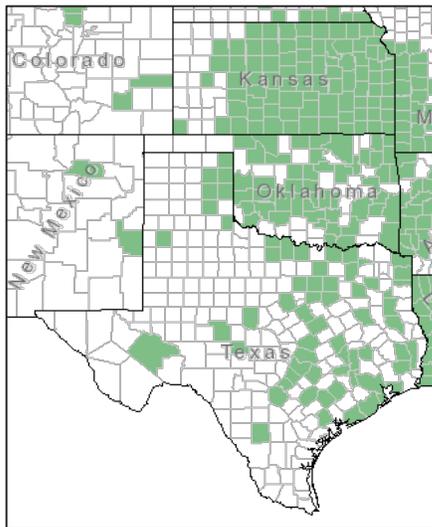
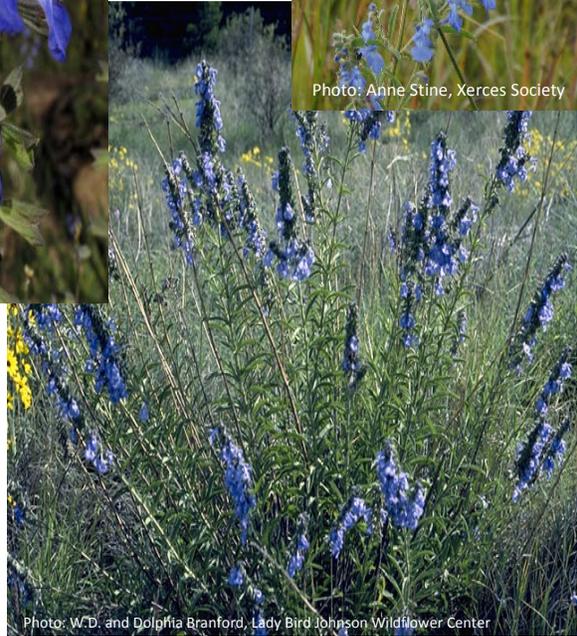


Photo: W.D. and Dolphia Branford, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Early flowering



Close-up of flowers/full flowering



Close-up of stem and leaves arrangement



Leaf arrangement

## Baldwin's Ironweed

## Aster Family

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

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

**Plant Symbol:** VEBA

**Family:** Asteraceae

**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.

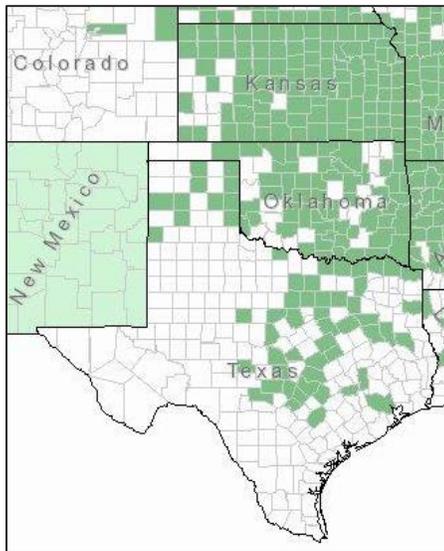


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Close-up of flower/flowering



Leaves



Close-up of flower buds



Senescence

## Bearded Beggarticks

## 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

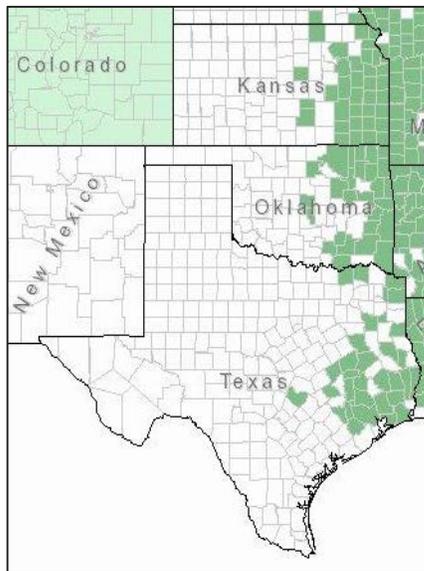
**Plant Height:** variable, 1 - 5 ft.

**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.



Important Plants of the Monarch Butterfly



Full flowering/close-up of flower



Stem and leaf



Seedling



Seed

## Betonyleaf Thoroughwort

## Aster Family

**Other Common Names:** Betonyleaf mistflower

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

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

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

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

**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.

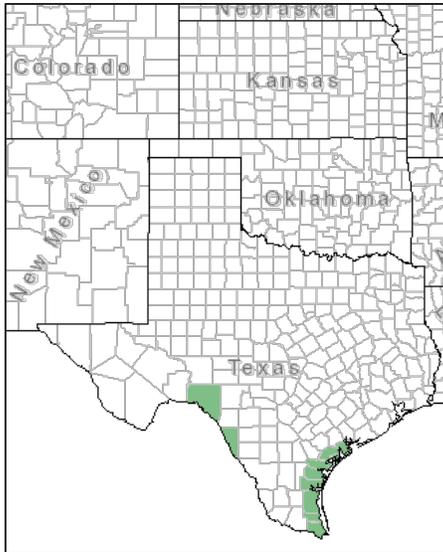


Photo: Texas Nature Conservancy, William Carr

## Important Plants of the Monarch Butterfly



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Foliage



Photo: Texas Nature Conservancy and William Carr

Flowering

## Blacksamson Echinacea

## Aster Family

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

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

**Plant Symbol:** ECAN2

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

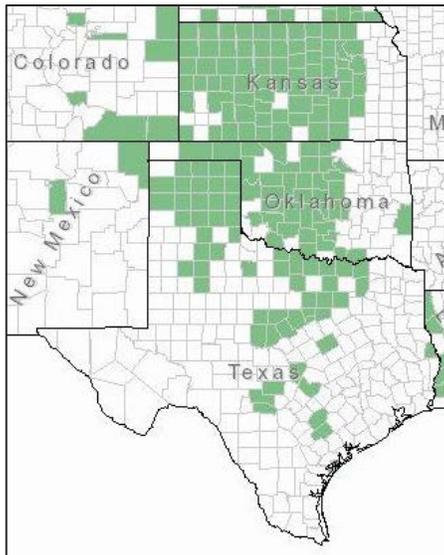
**Plant Height:** 2 - 3 ft.

**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.



# Important Plants of the Monarch Butterfly



Seedlings



Full flowering



Early flower development



Mature flower head



Leaf arrangement



Close-up of leaf



Habit of black-samson Echinacea at flowering

## Blue Mistflower

## Aster Family

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

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

**Plant Symbol:** COCO13

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

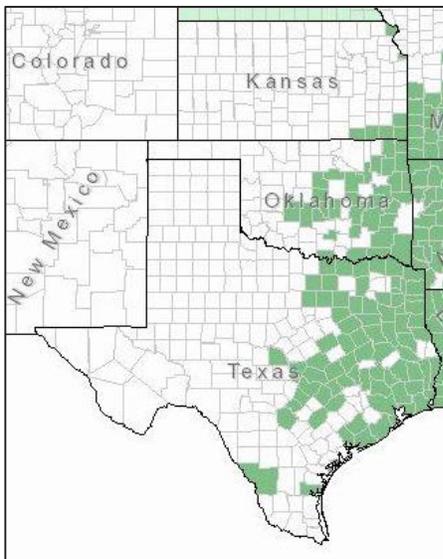
**Plant Height:** up to 3 feet

**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.



## Important Plants of the Monarch Butterfly



Early flower development



Flowering/close-up of flowers



Photo: Peggy Romfh, Lady Bird Johnson Wildflower Center



Photo: Mike Haddock

Stem and leaf characteristics

## Butterfly Milkweed

## Milkweed Family

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

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

**Plant Symbol:** ASTU

**Family:** Asclepiadaceae

**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.

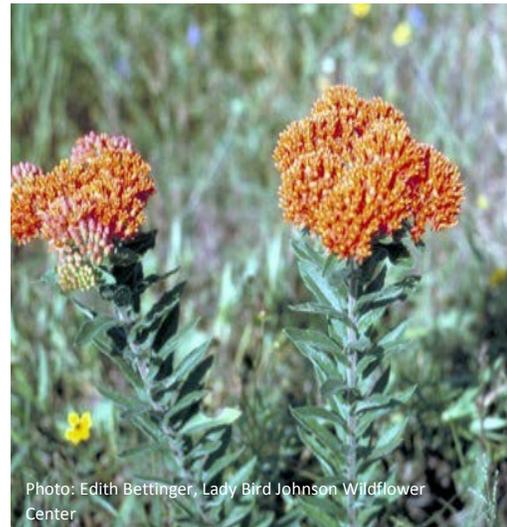
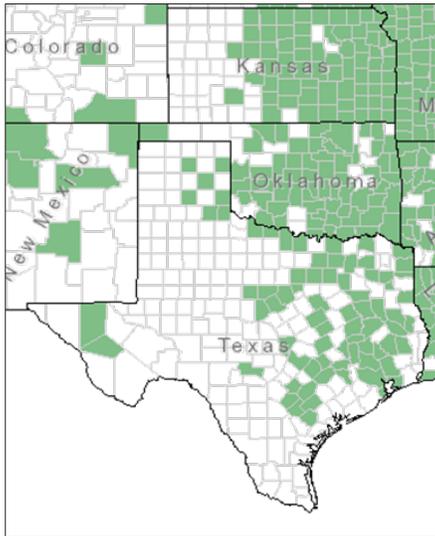


Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Photo: Lady Bird Wildflower Center Staff

Seedling



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center



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

Early flowering/close-up view of flower



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

## Carrot Family

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

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

**Plant Symbol:** ERYU

**Family:** Apiaceae

**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.

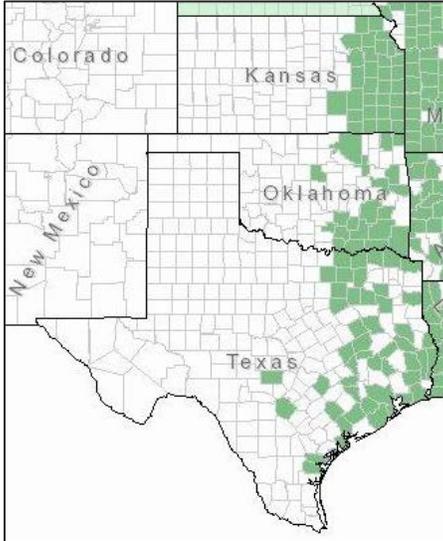


Photo: Carolyn Fannon Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Seedling (note the toothed leaf margin)



Mature



Flowering/close-up of flower



Early vegetative growth



Toothed leaf margin



## Common Dittany

Mint family

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

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

**Plant Symbol:** CUOR

**Family:** Lamiaceae

**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.

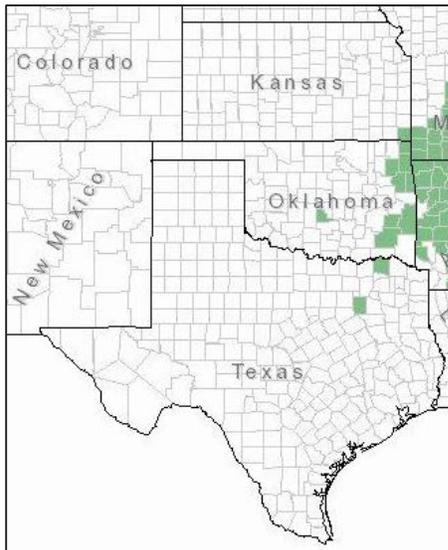


Photo: Derick Poindexter©

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## Common Milkweed

## Milkweed Family

**Other Common Names:** none

**Scientific Name:** *Asclepias syriaca* L.

**Plant Symbol:** ASSY

**Family:** Asclepiadaceae

**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.

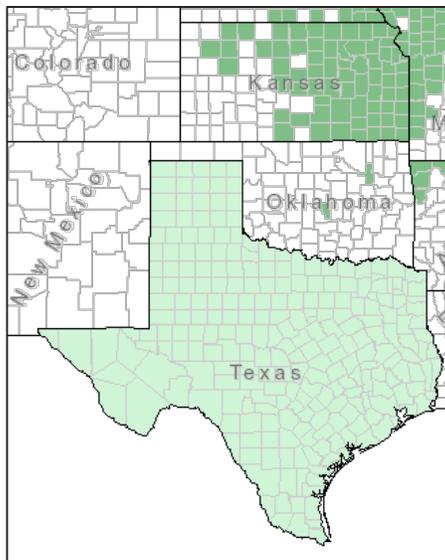


Photo: Kelly Gill, Xerces Society

## Important Plants of the Monarch Butterfly



Flowering/close-up of flowers



Stem and leaf arrangement

## Common Sunflower

## 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.

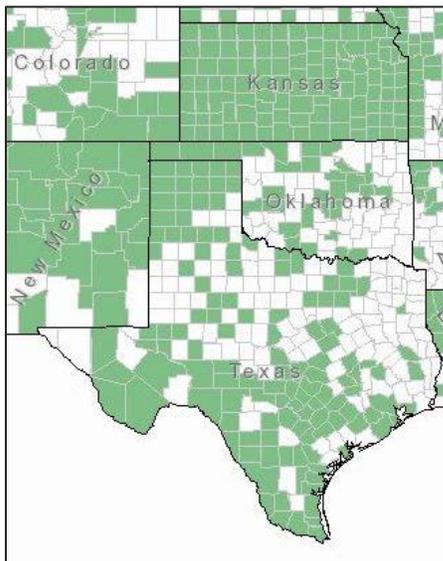


Photo: David Northington, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Seedling



Full flowering



Close-up of stem



Mature plant



Developing flower bud

## Compassplant

## Aster Family

**Other Common Names:** none

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

**Plant Symbol:** SILA3

**Family:** Asteraceae

**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.

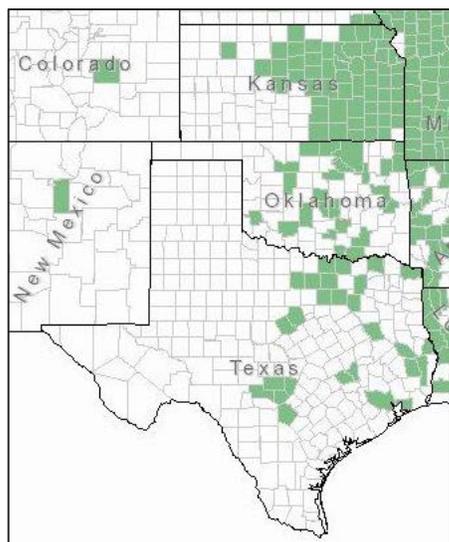


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly

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



Close-up of flowers and unopened flower bud



Photo: USDA-NRCS

Seedling



Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Leaf



Photo: Paul Cox, Lady Bird Johnson Wildflower Center

Photo: Sally and Andy Wasowski, 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

**Family:** Verbenaceae

**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.

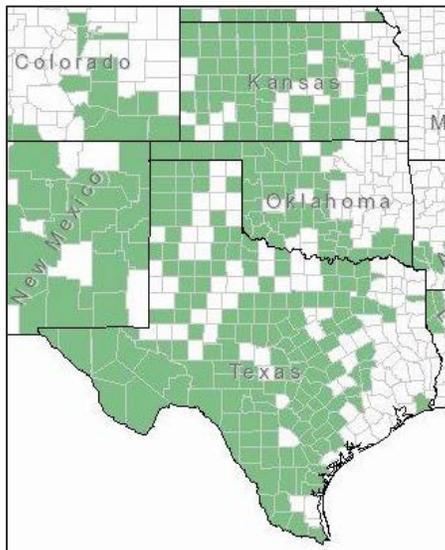


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



Flowering and close-up of flowers



Leaf arrangement



Mature

## Dotted Blazing Star

## 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

**Family:** Asteraceae

**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. are 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 bumble bees and other native pollinators.

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

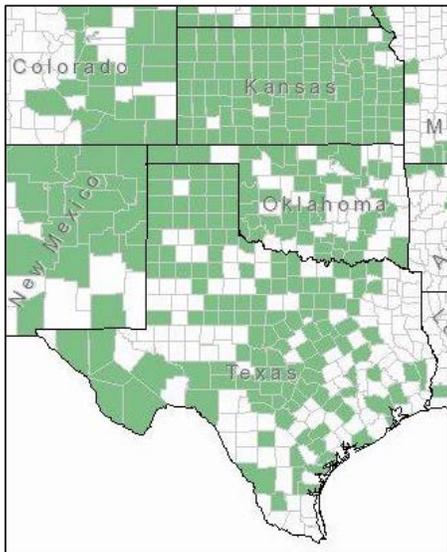


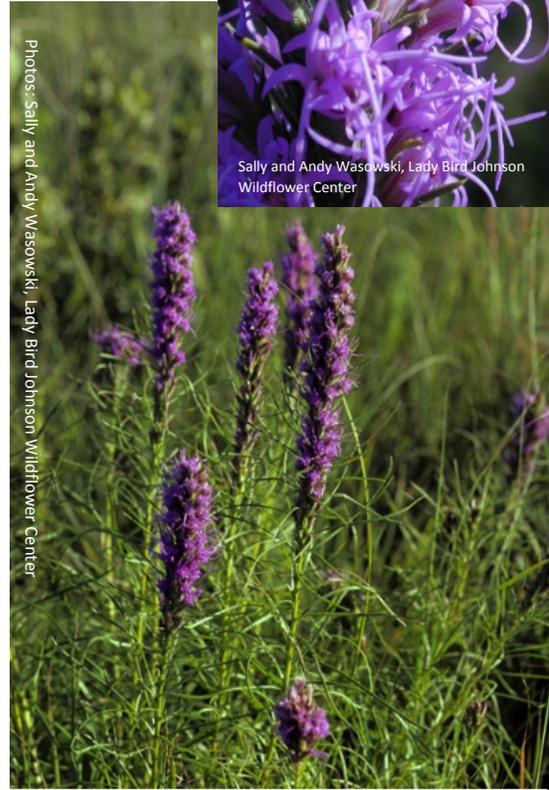
Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Flower buds



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: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Seed maturation

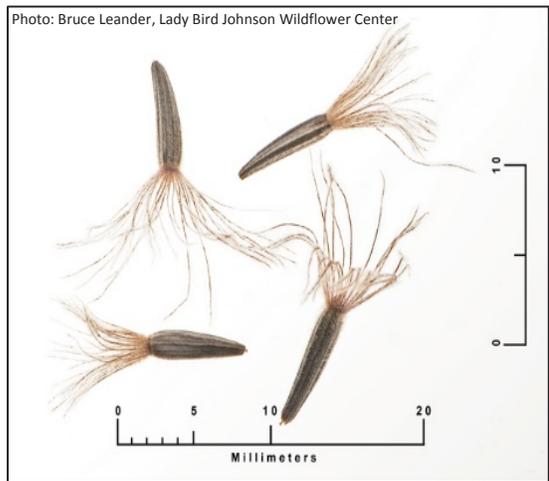


Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Seed

## Downy Ragged Goldenrod

## Aster Family

**Other Common Names:** downy goldenrod

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

**Plant Symbol:** SOPE

**Family:** Asteraceae

**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.

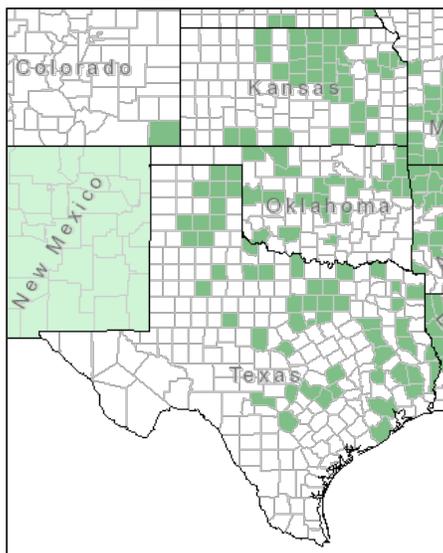


Photo: Mike Haddock

## Important Plants of the Monarch Butterfly



Photo: Mike Haddock

Flowering/close-up of flowers



Photo: Mike Haddock



Photo: Mike Haddock

Mature plant



Photo: Mike Haddock

Stem and leaf arrangement

## Entireleaf Indian Paintbrush

## Figwort Family

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

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

**Plant Symbol:** CAIN13

**Family:** Scrophulariaceae

**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.

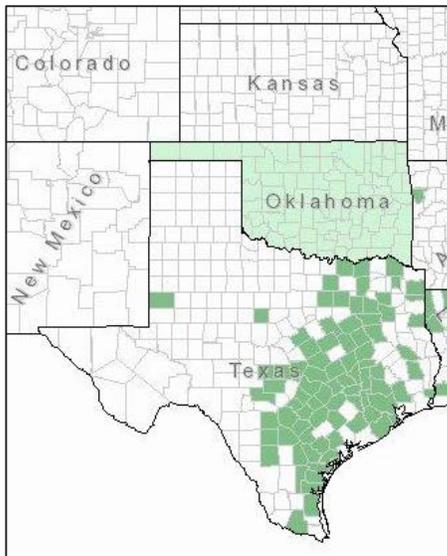


Photo: Randy Heisch, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Seedling Photos: Staff, Lady Bird Johnson Wildflower Center



Seedlings



Photo: Plant Resource Center, Univ. of Texas

Full flowering



Photo: Randy Matthews, Lady Bird Johnson Wildflower Center



Photo: Randy Heisch, Lady Bird Johnson Wildflower Center

Close-up of flower showing colored bracts/ stem and leaf

## Fringed Twinevine

## Milkweed Family

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

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

**Plant Symbol:** FUCY

**Family:** Asclepiadaceae

**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.

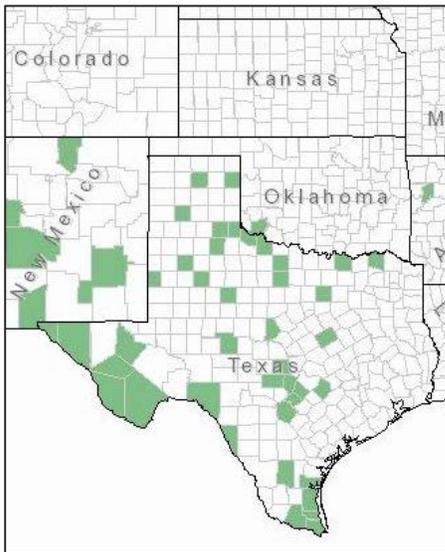


Photo © Bob O'Kennon

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## Golden Crownbeard

## Aster Family

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

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

**Family:** Asteraceae

**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.

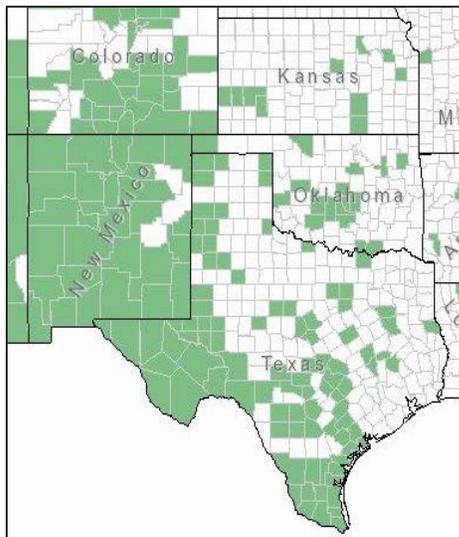


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Flowering



Leaf



Seed



Lobed at leaf base

## Gray Goldenrod

## Aster Family

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

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

**Plant Symbol:** SONE

**Family:** Asteraceae

**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.

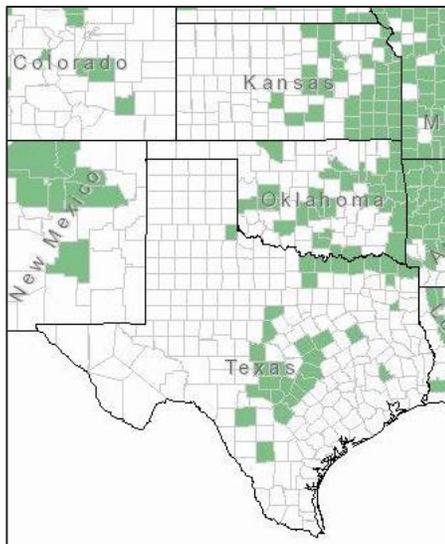


Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



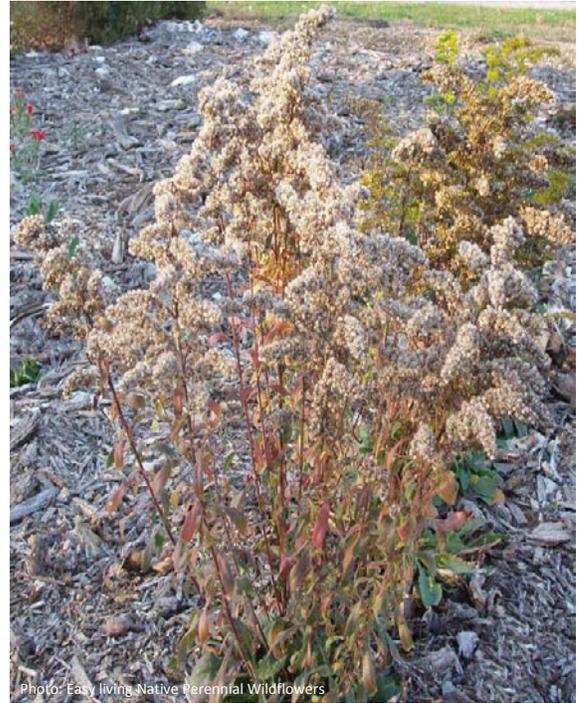
Unopened flowers



Close-up of Flowers



Full bloom



Mature plant



Seed

## Green Antelopehorn

## Milkweed Family

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

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

**Plant Symbol:** ASVI2

**Family:** Asclepiadaceae

**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.

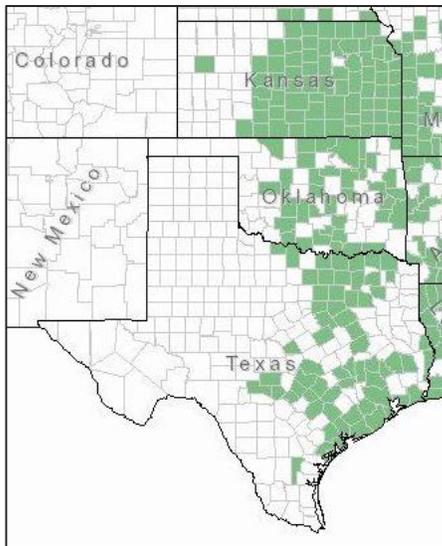


Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center



Photo: Marilyn Medron, Lady Bird Johnson Wildflower Center

Full Flowering/close-up of flowers/flower buds

Leaf and stem



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Fruit



Photo: Carolyn Fannon, Lady Bird Johnson Wildflower Center

Mature fruit and seed

## Lateflowering Thoroughwort

## Aster Family

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

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

**Plant Symbol:** EUSE2

**Family:** Asteraceae

**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.

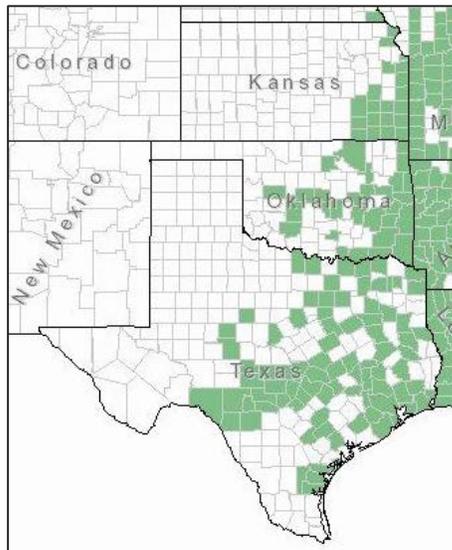


Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center



Photo: Robert Stone, Lady Bird Johnson Wildflower Center



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Flowering/close-up of flower heads



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center



Photo: Carl Fabre, Lady Bird Johnson Wildflower Center

Both photos showing stem and leaf arrangement

## Leavenworth's Eryngo

## Carrot Family

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

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

**Plant Symbol:** ERLE11

**Family:** Apiaceae

**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.

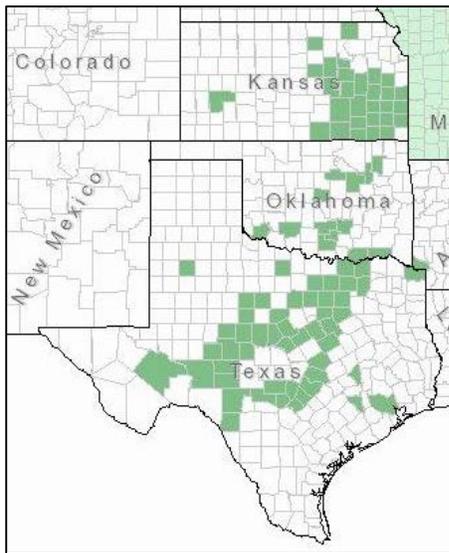


Photo: Campbell and Lynn Laughmiller, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full Flowering/Close-up of inflorescence



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement

## Maximillian Sunflower

## Aster Family

**Other Common Names:** Max sunflower

**Scientific Name:** *Helianthus maximiliani* Schrad.

**Plant Symbol:** HEMA2

**Duration:** Perennial

**Growth Habit:** Forb/herb

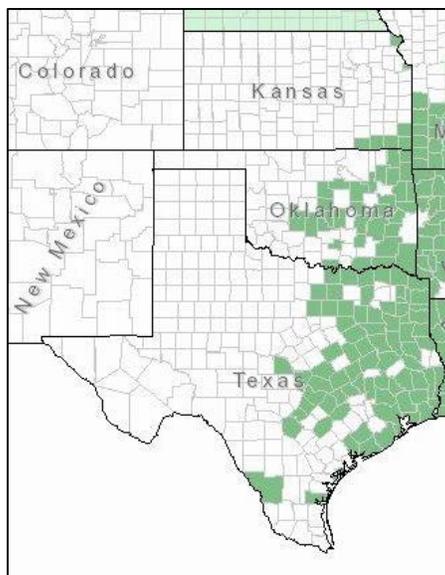
**Plant Height:** 3 - 10 ft.

**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.



Important Plants of the Monarch Butterfly



Photo: Lady Bird Johnson Wildflower Center Staff

Seedling



Photo: USDA-NRCS

Photo: USDA-NRCS

Mature plant



Photo: USDA-NRCS

Photo: USDA-NRCS

Full flowering/close-up of flower



Photo: USDA-NRCS

Late vegetative

## Palmleaf thoroughwort

## 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

**Family:** Asteraceae

**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.

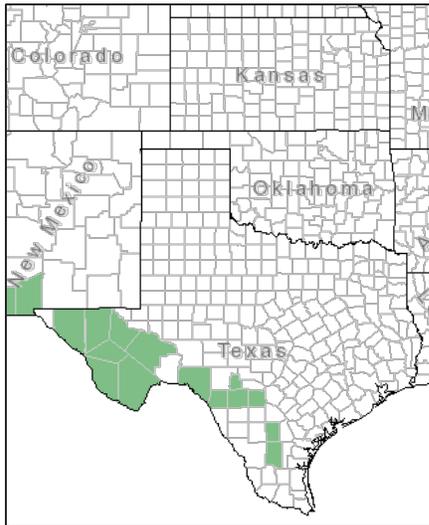


Photo: Ray Mathew Lady Bird Johnson Wildflower

# Important Plants of the Monarch Butterfly



Photo: Lee Page Lady Bird Johnson Wildflower Center



Photo: Ray Mathews Lady Bird Johnson Wildflower Center

Flowering/close-up of flowers



Photo: Bruce Leander Lady Bird Johnson Wildflower Center



Photo: Nancy Woolly, Lady Bird Johnson Wildflower Center

Full flowering and leaf arrangement



Photo: Bruce Leander Lady Bird Johnson Wildflower Center

Seed

## Pennsylvania Smartweed

## Smartweed Family

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

**Scientific Name:** *Polygonum pensylvanicum* (L.)

**Plant Symbol:** POPE2

**Family:** Polygonaceae

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 0.5 - 6 ft., variable

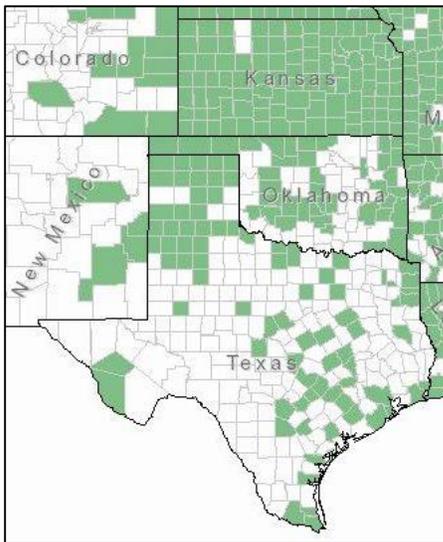
**Blooms/Fruits:** May - November

**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.

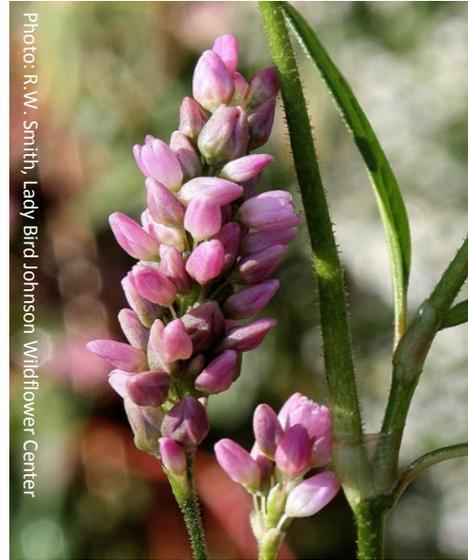


© Robin R. Buckallew

Important Plants of the Monarch Butterfly



Leaf, stem, and close-up of flower



Seed

## Pinkscale Blazing Star

## Aster Family

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

**Scientific Name:** *Liatrix 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 *Liatrix* 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

Important Plants of the Monarch Butterfly



Photo: Campbell and Lynn Loughmiller Lady Bird Johnson Wildflower Center

Flowering/close-up of flowers



Photo: W.D. and Dolphis Branstford, Lady Bird Johnson Wildflower Center



Photo: USDA-NRCS

Seedling



Photo: Harry Cliffe, Lady Bird Johnson Wildflower Center

Stem and leaf arrangement

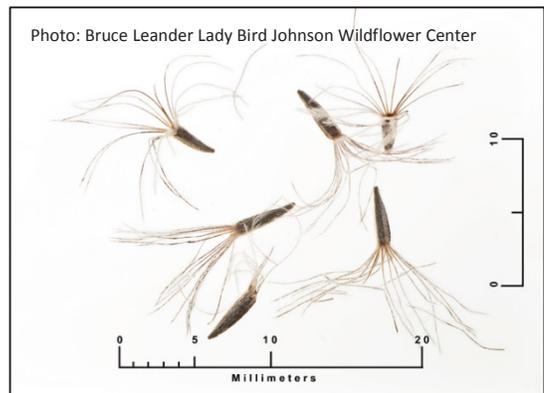


Photo: Bruce Leander Lady Bird Johnson Wildflower Center

Seed

## Purple Prairie Clover

## Pea Family

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

**Scientific Name:** *Dalea purpurea* Vent.

**Plant Symbol:** DAPU5

**Family:** Fabaceae

**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.

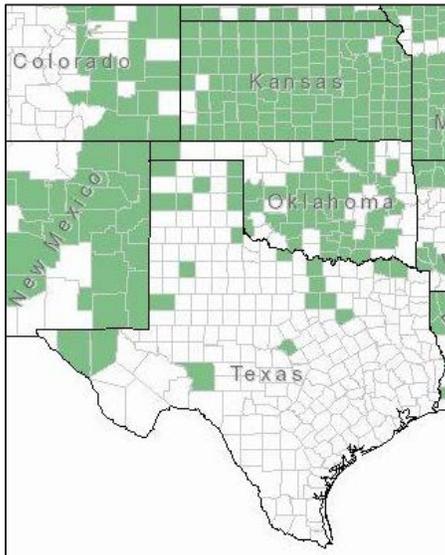


Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Seedlings



Flowering



Leaf



Mature

## Roughstem Rosinweed

## Aster Family

**Other Common Names:** none

**Scientific Name:** *Silphium radula* Nutt.

**Plant Symbol:** SIRA2

**Family:** Asteraceae

**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.

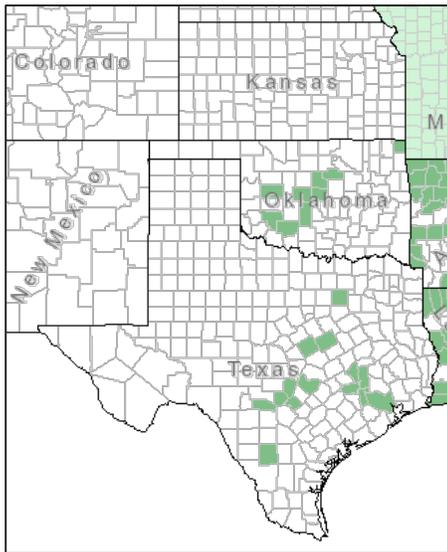


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flower



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

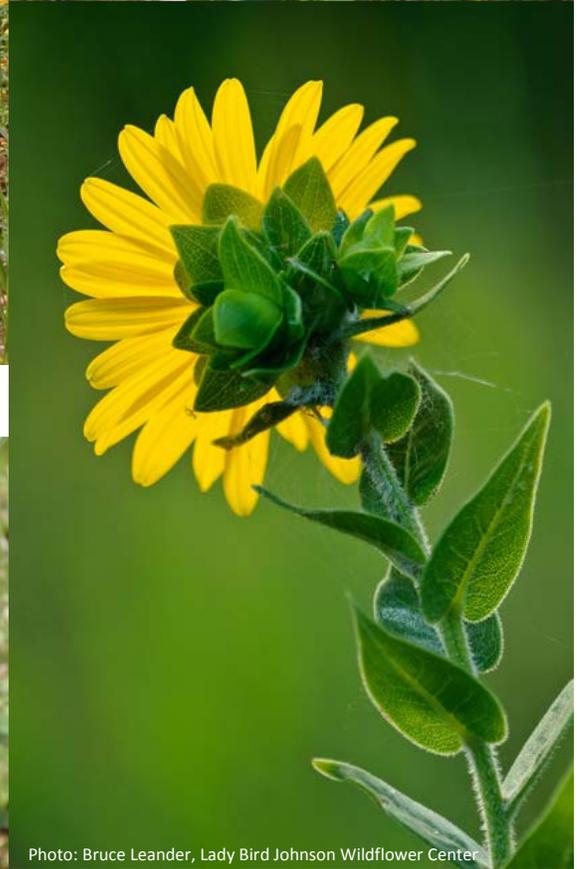


Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Close-up of underside of flower



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and Leaf arrangement

## Roundhead Prairie Clover

## Pea Family

**Other Common Names:** round headed dalea, white prairie clover

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

**Plant Symbol:** DAMU

**Family:** Fabaceae

**Duration:** Perennial

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

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

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

**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.

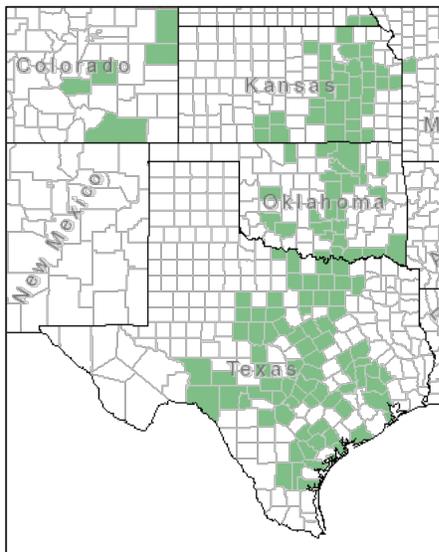


Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



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



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

Full flowering/close-up of flower/mature flowers



Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Leaf and stem

## 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

**Family:** Asteraceae

**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.

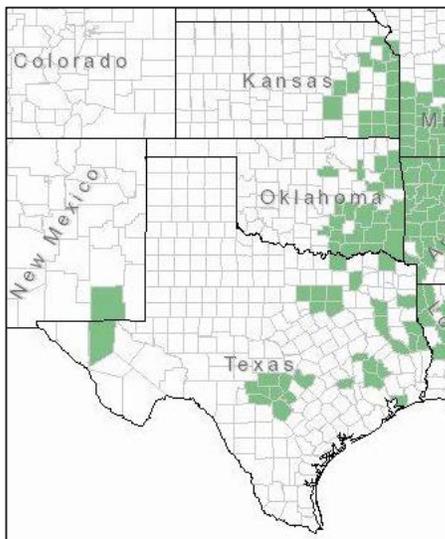


Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



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

## Aster Family

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

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

**Plant Symbol:** HEGR4

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

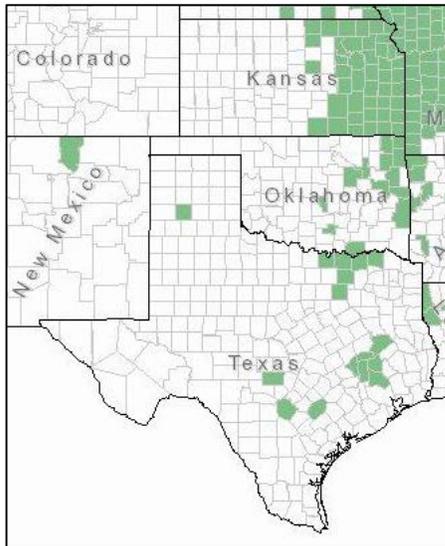
**Plant Height:** 3 - 12 ft.

**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.



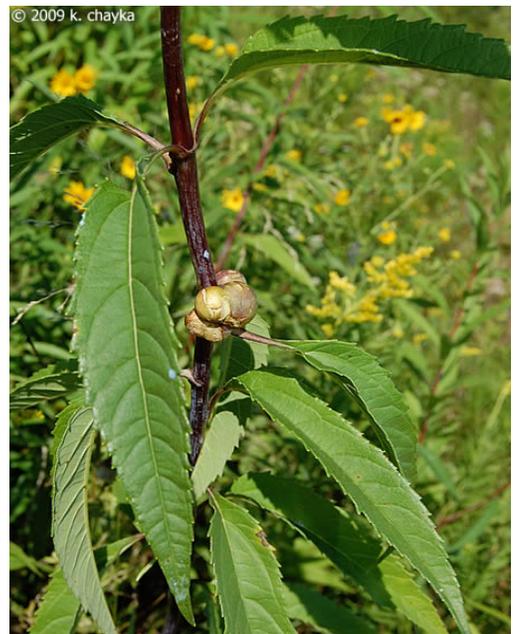
Important Plants of the Monarch Butterfly



Full flowering and close-up of flowers



Leaf arrangement



Stem and close-up of leaf

## Shiny Goldenrod

## Aster Family

**Other Common Names:** none

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

**Plant Symbol:** OLN1

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 1.5 - 3 ft.

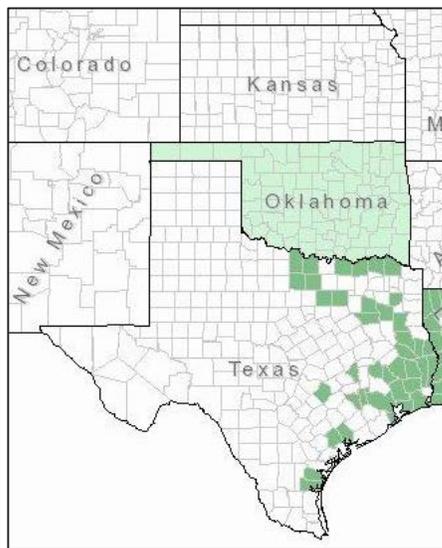
**Blooms/Fruits:** June - November

**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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## Sneezeweed

## Aster Family

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

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

**Plant Symbol:** HEAM

**Family:** Asteraceae

**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.

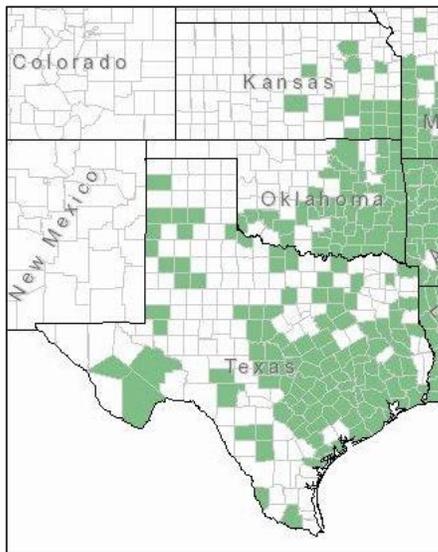


Photo: Andy and Sally Wasowski, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center



Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

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



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

Early seed maturity



Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Flower head after rays have fallen



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

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## Soft-hair Marbleseed

## Borage Family

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

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

**Plant Symbol:** ONBE

**Family:** Boraginaceae

**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.

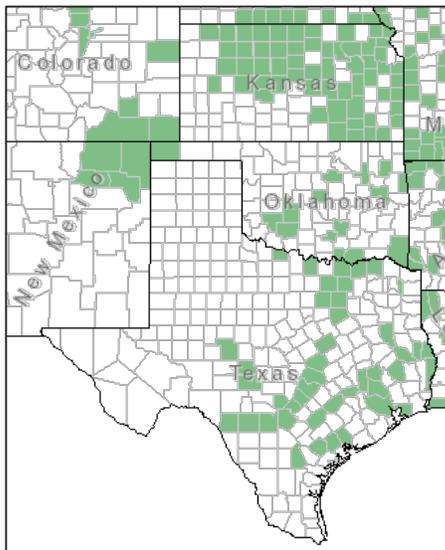


Photo: W.D. and Dolphia Branford, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



Close-up of flowers; stem and leaf arrangement



Seedling



Seed

## Spanish Gold

## Aster Family

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

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

**Plant Symbol:** GRPA8

**Family:** Asteraceae

**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.

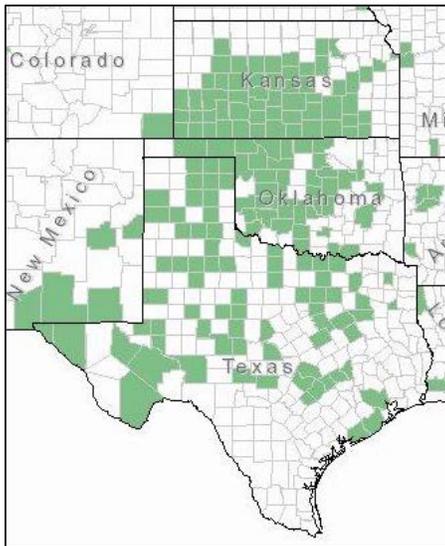


Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center

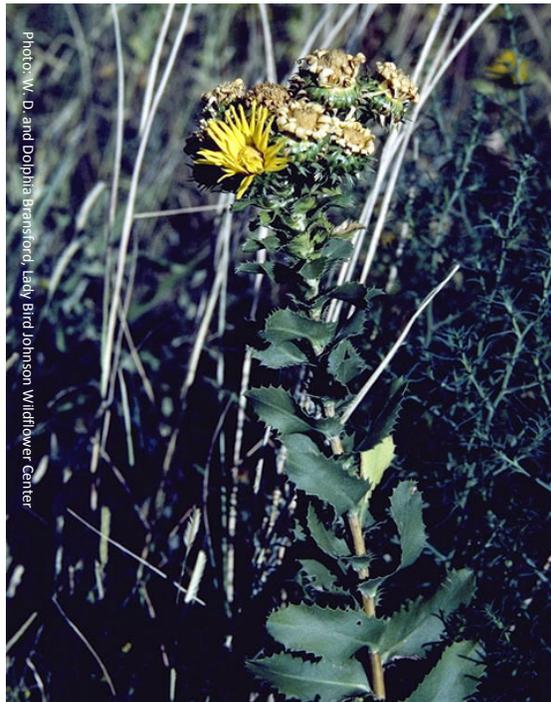
## Important Plants of the Monarch Butterfly



Flowering



Close-up of flower and buds



Stem and leaf

## Spider Milkweed

## 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.

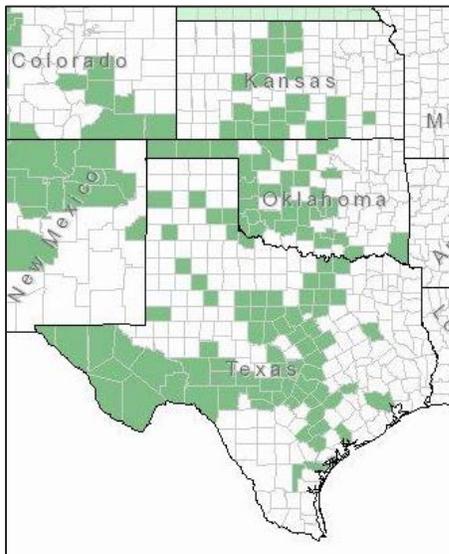


Photo: Pam Williams, Lady Bird Johnson Wildflower Center

Important Plants of the Monarch Butterfly



Photo: Campbell and Lynn Loughmiller Lady Bird Johnson Wildflower Center



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center



Photo: Norman Flaigg, Lady Bird Johnson Wildflower Center

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



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Fruit



Photo: Pam Williams, Lady Bird Johnson Wildflower Center

Empty fruit pod

## 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

**Family:** Verbenaceae

**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.

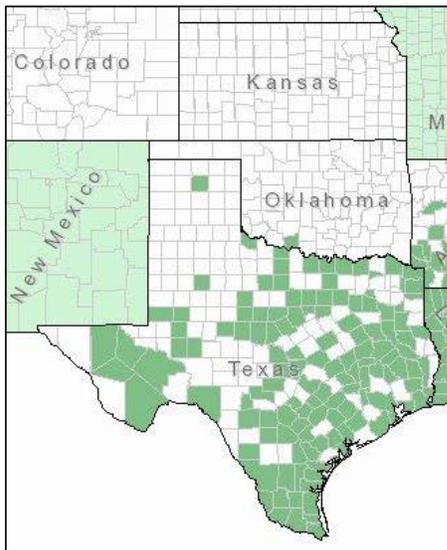


Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center

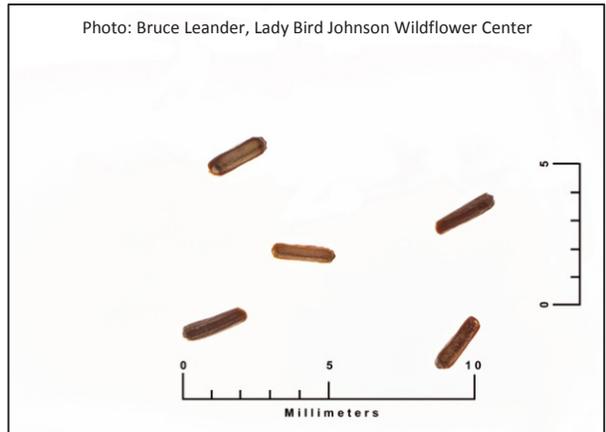
Important Plants of the Monarch Butterfly



Flowering/close-up of flower



Habitat of Texas vervain



Seed

## White Crownbeard

## Aster Family

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

**Scientific Name:** *Verbesina virginica* L.

**Plant Symbol:** VEVI3

**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.

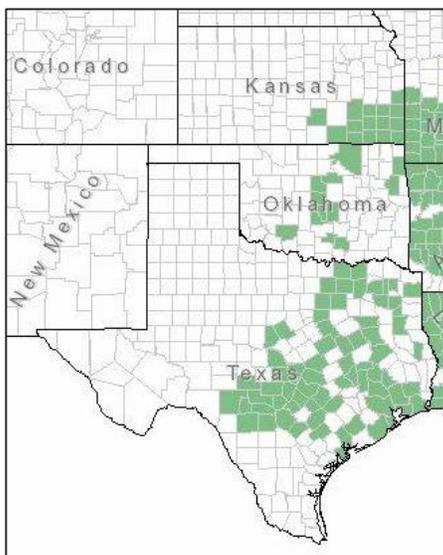


Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



Seedling (note the winged-stem)



Flowering



Close-up of winged stem



Ice ribbon formed around the stem

## White Heath Aster

## 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.

**Family:** Asteraceae

**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.

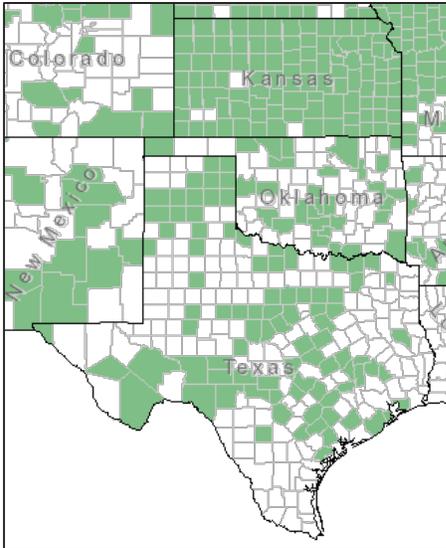


Photo: Terry Glase, Lady Bird Johnson Wildflower Center

# Important Plants of the Monarch Butterfly



Stem and leaf arrangement



Flowering/close-up of flowers



Seedling

## Willowleaf Aster

## Aster Family

**Other Common Names:** narrow-leaf aster, willow aster

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

**Plant Symbol:** SYPR5

**Family:** Asteraceae

**Duration:** Perennial

**Growth Habit:** Forb/herb

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

**Blooms/Fruits:** August - October

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

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

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

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

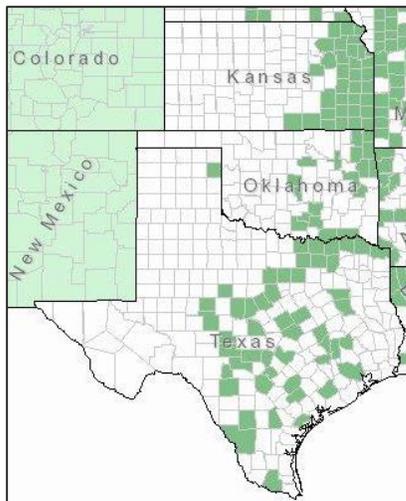


Photo: Janice Lynn, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center



Photo: Janice Lynn, Lady Bird Johnson Wildflower Center



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

Flowering/close-up of flowers/flower buds



Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Stem and Leaf



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

## Wrinkleleaf Goldenrod

## Aster Family

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

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

**Plant Symbol:** SORU2

**Family:** Asteraceae

**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*).

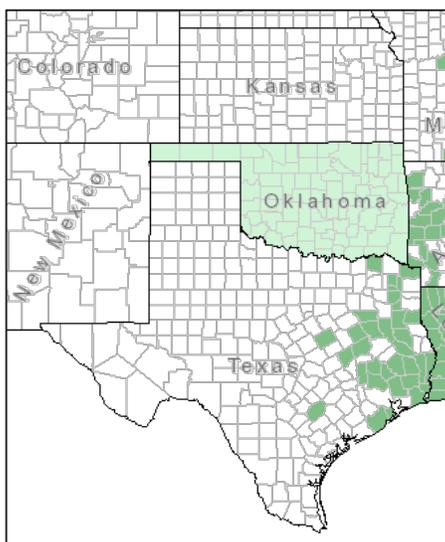


Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



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

Close-up of flowers



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

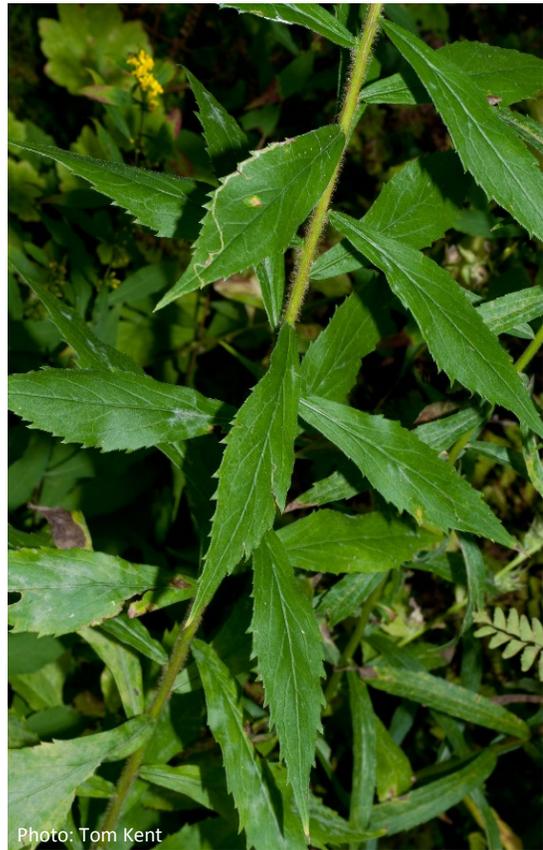


Photo: Tom Kent

Leaf arrangement



Photo: Tom Kent

Close-up of stem

## Zizotes Milkweed

## Milkweed Family

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

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

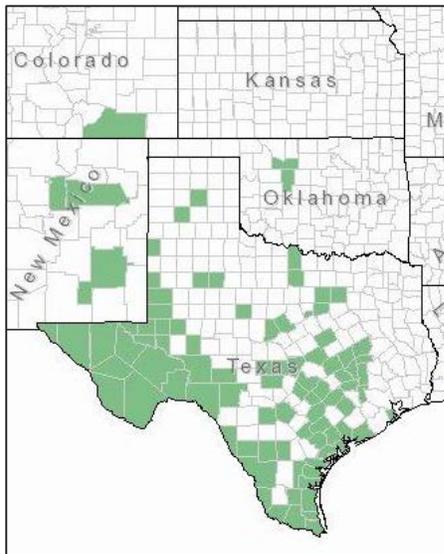


Photo: Robert Stone, Lady Bird Johnson Wildflower Center

## Important Plants of the Monarch Butterfly



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

# Natural Resources Conservation Service

## www.nrcs.usda.gov

## Acknowledgements

### Photo Credits

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- Patrick Alexander, Plants database
- Derick Poindexter
- Steve Eggers
- Easy living native, perennial wildflowers
- Kathy Chayka, Minnesota Wildflowers

### Credits

Distribution Maps: USDA National Plants Database (<http://plants.usda.gov>)

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