# Monarch Butterfly

## Small-Scale Habitat Development in Kansas

The monarch butterfly (*Danaus plexippus*) is one of North America's most recognizable insects, known not only for its showy appearance but for the dramatic migration it makes every year. In recent decades, the population of monarchs migrating has declined, partly because of a lack of suitable habitat. Farmers, businesses, and homeowners can play a role in restoring habitat. Here's what you can do to help.

## Beauty in Numbers

The monarch is the only butterfly on Earth known to migrate north and south every year. Migration is especially eye-catching in the fall as hundreds of thousands of butterflies make their way to overwintering grounds in Mexico. Sightings of large numbers of passing monarchs or nighttime roosts are not uncommon along the migration route this time of year.

The population of monarchs returning to Mexico has severely declined in recent decades. What used to be tens of acres of monarchs overwintering in trees in Mexico has dwindled to a few acres or less. A variety of issues contribute to the decline of this butterfly, particularly a lack of suitable habitat to provide plant food for caterpillars and nectar for migrating adults. This is making the journey north in the spring and the return trip south in the fall increasingly difficult.

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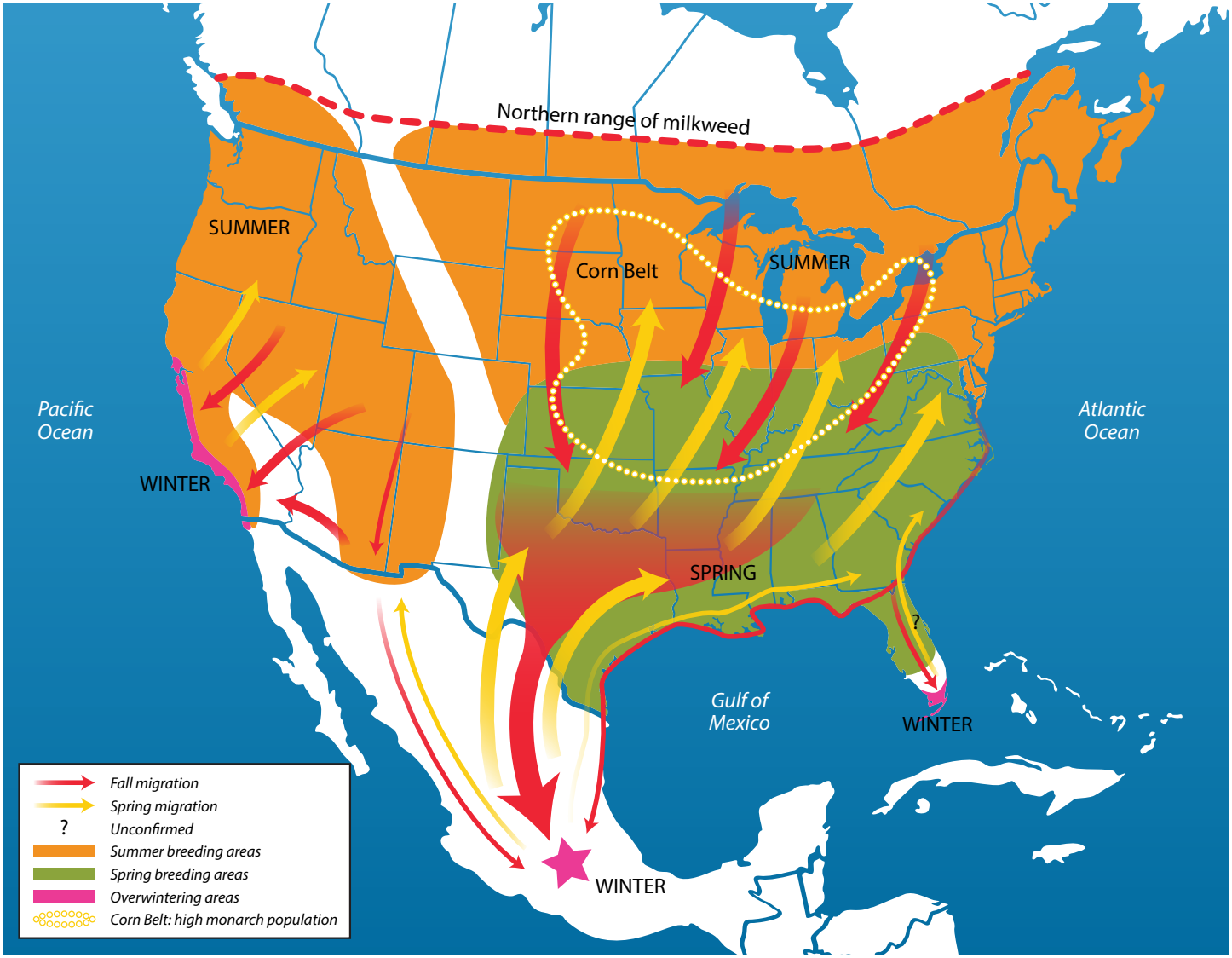
# Migration Route

Large-scale habitat plans are important to the overall success of the monarchs, but small-scale restoration efforts are just as critical. The idea is to create a continuous corridor of proper habitat, but restoration of roadsides and grasslands in all areas of the monarch flyway may not be possible because of lack of interest or harsh climate. Small-scale efforts are needed to create that continuous corridor, especially in Kansas where the monarchs transition from the Midwest into the High Plains. Land use and overall climatic conditions have reduced the amount of habitat suitable for monarchs moving in and out of the High Plains.

Monarch butterflies will complete as many as four generations to reach the northern limits of their range. The key component for reproduction is the presence of milkweed plants. Adult butterflies only lay eggs on milkweeds, as this is the sole food source for developing caterpillars. A reduction in milkweed in the environment leads to fewer adults making the trip south in the fall, a trip that must be completed by the final generation of the year. Adult butterflies traveling from the Canadian border back to Mexico also need a food source of their own in the form of nectar from a large variety of flowers. A reduction in nectar sources along the route south means fewer butterflies make it to the overwintering grounds. When migration begins the following spring, there are even fewer adults to start the journey north.




National plans to restore habitat for monarch butterflies throughout the range of their annual migration identify Kansas as one of only 10 states critical in supporting the monarch migration. Efforts include increasing and enhancing important host plants in the environment and ensuring the presence of valuable nectar plants to sustain monarch butterflies during their journey north and south. *Adapted from MonarchWatch.org.*

## Native Kansas Milkweeds

| Common name | Scientific name | Comments | Recommended Kansas region |
|---|---|---|---|
| Antelope horn milkweed | *Asclepias asperula* | drought tolerant, one of first to emerge in the spring | west |
| Broadleaf milkweed | *Asclepias latifolia* | rare statewide | west |
| Butterfly milkweed* | *Asclepias tuberosa* | highly attractive to many pollinators | throughout |
| Clasping milkweed | *Asclepias amplexicaulis* | rare statewide | east |
| Common milkweed | *Asclepias syriaca* | fast growing, colony forming | east |
| Dwarf milkweed | *Asclepias involucrata* | not seen in KS in 30 years | - |
| Engelmann's milkweed | *Asclepias engelmanniana* | drought tolerant | west |
| Four-leaf milkweed | *Asclepias quadrifolia* | state endangered | - |
| Green comet milkweed | *Asclepias viridiflora* | attractive, comet-like flowers | throughout |
| Green milkweed | *Asclepias viridis* | large flowers | east |
| Horsetail milkweed | *Asclepias subverticillata* | drought tolerant | west |
| Mead's milkweed | *Asclepias meadii* | federally protected | - |
| Narrowleaf milkweed | *Asclepias stenophylla* | slim, delicate plants | throughout |
| Plains milkweed | *Asclepias pumila* | small statured, big flowers | throughout |
| Purple milkweed | *Asclepias purpurascens* | rare statewide | east |
| Sand milkweed | *Asclepias arenaria* | rare statewide | west |
| Showy milkweed | *Asclepias speciosa* | drought tolerant, colony forming | west |
| Smooth milkweed | *Asclepias sullivantii* | showy pink flowers, colony forming | east |
| Swamp milkweed* | *Asclepias incarnata* | requires well-watered conditions, highly attractive to many pollinators | east |
| Tall green milkweed | *Asclepias hirtella* | rare statewide | east |
| Whorled milkweed | *Asclepias verticillata* | very fragrant flowers | east |
| Wooly milkweed | *Asclepias lanuginosa* | state endangered | - |

*live plants commonly found commercially

Butterfly milkweed, *Asclepias tuberosa*, is one of the more eye-catching milkweeds.

# Establishing Habitat

Taking into account both spring and fall migrations, monarch butterflies spend approximately two months of the year reproducing and traveling in Kansas. The critical function of establishing monarch butterfly habitat in Kansas is to provide food plants for the developing caterpillars and nectar plants for the adults. This can be accomplished with seeds or young transplants and a suitable area for planting. Most milkweed plants and many of the nectar plants used by the monarch are typical of an open grassland or prairie system. Ideally, choose a location that receives 6 to 8 hours of sunlight each day. Beyond this, the design and aesthetics of the monarch habitat are up to you. The plants you include are the most significant details.

Blazing star, *Liatris pycnostachya*

# Selecting Plants

## Milkweeds

Most importantly, the habitat should include milkweed plants. Of the more than 20 species of milkweed in Kansas, all can be used by monarchs for egg laying. Some species work better than others for a small habitat project and a few are easier to find and establish. To increase the liklihood of success, choose milkweed species that are appropriate for your region. Species that thrive in western Kansas may not thrive in eastern Kansas and vice versa. Milkweed plants native to Kansas are listed on page 3.

## Native Nectar Sources Used by Monarch Butterflies in Kansas

| Name | Scientific name | Bloom season | # of species in Kansas | Recommended for western Kansas | Recommended for eastern Kansas |
|---|---|---|---|---|---|
| Beebalm | *Monarda sp.* | Spring – Summer | 6 | *M. punctata* | *M. fistulosa* |
| Verbena | *Glandularia sp.* | Spring – Fall | 2 | *G. bipinnatifida* | *G. canadensis* |
| Echinacea | *Echinacea sp.* | Summer | 4 | *E. angustifolia* | *E. angustifolia*, *E. purpurea* |
| Prairie clover | *Dalea sp.* | Early summer | 10 | *D. purpurea* | *D. purpurea*, *D. candida* |
| Blazing star | *Liatris sp.* | Summer – Fall | 7 | *L. punctata* | *L. aspera*, *L. pycnostachya* |
| Goldenrod | *Solidago sp.* | Summer – Fall | 11 | *S. missouriensis, S. rigida, S. canadensis* | |
| Sunflower | *Helianthus sp.* | Summer – Fall | 9 | *H. petiolaris*, *H. maximiliani* | *H. tuberosus*, *H. petiolaris* |
| Ironweed | *Vernonia sp.* | Summer – Fall | 2 | *V. baldwinii* | |
| Sage | *Salvia sp.* | Late summer – Fall | 3 | *S. azurea* | |
| Aster | *Symphyotrichum sp.* | Late summer – Fall | 15 | *S. fendleri* | *S. novae-angliae*, many others |

A monarch caterpillar feeds on butterfly milkweed, *Asclepias tuberosa*.

A monarch chrysalis hidden in garden vegetation. Caterpillars often travel quite a distance from the milkweed plants to pupate on other surfaces and vegetation.

## Nectar Plants

Keeping in mind the timing of the migration, it is critical to include a variety of nectar sources to provide fuel for adults whether they are moving north in the spring or south in the fall. A garden in continuous bloom throughout the seasons is not only aesthetically pleasing, but serves an important function for monarchs and other native pollinators. As with milkweeds, choose low-maintenance, well-adapted nectar plants for your region of the state, so passing monarchs have fuel for their trip. There are hundreds of nectar plant species in Kansas, but some are more attractive than others. See page 4 for a list of plants particularly good for monarchs. Many can be grown from seed or purchased commercially.

## Determining Size

So how big should the habitat be? How many plants should be included? No effort is too small. Space can be a limiting factor in urban and suburban environments, but with careful planning and plant selection, it is impressive how much benefit can come out of even a small planting. Even if milkweed cannot be a part of the habitat project, simply providing beneficial nectar sources goes a long way to help the monarchs.

## Finding Plants

Nurseries and garden stores carry a variety of nectar plants native to Kansas. They would be a good place to start when locating materials for a habitat project. Milkweed species are also readily available, with butterfly milkweed and swamp milkweed being the most common in retail outlets. Seasonal native plant sales are another great way to find plants for your region and project. For added variety, try starting milkweed plants and nectar sources from seed. Online stores, local garden clubs, and native plant enthusiasts are excellent sources of seeds and native plant information.

# Can you identify a monarch?

| | Monarch<br>*Danaus plexippus* |
|---|---|
| **Adult**<br>When viewed from above, the adult monarch lacks the extra white spots just inside the forewing margin as seen in the queen. Monarchs also lack the diagonal black stripe on the hindwing as seen in the viceroy. |  |
| **Adult**<br>Viewed from below, the adult monarch lacks the extra white spots along the hindwing venation as seen in the queen. The diagonal black stripe on the hindwing is absent on the monarch but not on the viceroy. |  |
| **Caterpillar**<br>The monarch caterpillar has two pairs of tendrils on its body, while the queen caterpillar has three pairs. The viceroy caterpillar resembles bird scat. |  |
| **Chrysalis**<br>Monarch and queen pupae are similar, but a monarch chrysalis has four gold dots along the side base of the pupae, while the queen has only two gold dots along the base when viewed from the side. A viceroy chrysalis resembles bird scat. |  |

# Don't mistake these for a monarch.

| **Queen** *Danaus gilippus* | **Viceroy** *Limenitis archippus* |
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# Online Resources for Kansas Native Plants

**De Lange Seed, Inc.**, Girard, Kansas
620-724-6223 • *www.delangeseed.com*

**Kansas Forest Service**, Manhattan, Kansas
785-532-3300 • *www.kansasforests.org*

**Kaw River Restoration Nurseries**,
Baldwin City, Kansas
785-842-3300 • *www.appliedeco.com*

**Sharp Bros. Seed Co.**, Healy, Kansas
800-462-8483 or 620-398-2231 • *www.sharpseed.com*

**Sunflower Farms**, Cherryvale, Kansas
620-336-2066

**Vinland Valley Nursery**, Baldwin City, Kansas
785-594-2966 • *www.vinlandvalleynursery.com*

Engelmann's milkweed, *Asclepias engelmanniana*, is recommended for western Kansas.

Various echinacea species provide nectar for butterflies and other pollinators.

Asters are a good source of nectar in the fall.


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