

Butterfly Gardening

Stephen M. Spomer, Research Technologist, Entomology; and Kim Todd, Extension Horticulturist

This NebGuide discusses butterflies and their relatives and the plants that will help attract them to a garden.

Butterflies can be found throughout Nebraska, from the coniferous forests of the Pine Ridge, through the grasslands of the Sandhills, to the deciduous forests along the Missouri River. Like bird watching or observing wildflowers, watching butterflies is a popular and enjoyable pastime. Although many natural butterfly habitats have been lost to urbanization and agricultural development, conservation of these beautiful insects has been incorporated into numerous programs and projects. Many individuals also are taking a personal interest in attracting these fascinating insects to their gardens. By choosing the right plants, you can attract many different butterflies, moths, and skippers, adding an ever-changing mural of color and motion to your landscape.

Butterflies, moths, and skippers belong to the insect order Lepidoptera, with moths comprising the largest percentage. Skippers are most often mistaken for butterflies, but they differ somewhat (*Table I*). All three groups act as pollinators for specific plants and are a food source for many animals. For this publication, reference to butterflies also includes moths and skippers.

Table I. Characteristics of butterflies, skippers, and moths.

| Butterflies | Skippers | Moths |
|--------------------------|--|---------------------------------------|
| Fly in daytime | Fly in daytime | Fly mostly at night |
| Clubbed antennae | Clubbed antennae with a feathery hook on end | Unclubbed, usually feathery, antennae |
| Usually brightly colored | Drab to colorful (often brown to orange) | Drab to colorful |
| Usually smooth | Usually smooth bodied Often powerful fliers | Usually hairy bodied |

Butterfly Biology and Life Cycle

Butterflies go through a four-stage development process known as metamorphosis. The four stages are egg, larva or caterpillar, pupa or chrysalis, and adult. Understanding a butterfly's life cycle can make watching them more enjoyable, and can help people understand the principles of attracting butterflies to their gardens. Depending on the species, the life cycle of the insect may take anywhere from about one month to an entire year to complete. Nebraska butterflies may have one, two, or more generations (broods) per year. Usually, the most common butterflies have multiple broods and provide a continuous array of color and activity in a butterfly garden throughout the season.

Life Cycle

Egg — Eggs are laid singly or in clusters, usually on the host plant, but sometimes in organic matter, weeds, or soil. Eggs hatch in a few days to a couple of weeks, depending on the species. However, some copper and hairstreak butterflies spend the winter in the egg stage. The larva eats its way out of the egg and is soon ready to feast on its host plant. Fritillaries are one exception, spending the winter as newly-hatched unfed larvae.

Larva — The larva continues to eat many times its own weight until its cuticle (skin) stretches to capacity. A hormone in the larva signals when it is time to shed its skin, or molt. Butterfly caterpillars go through three to five molts and are therefore found in various sizes before they are ready to pupate.

Pupa or Chrysalis — When the larva is full grown, another hormone signals when it is time to form a chrysalis, or pupate. The chrysalis is the resting stage between larva and adult. When it is time to pupate, the larva may spin a small silken mat to use to hang itself upside-down from a branch or leaf, or attach itself to the host plant by a silken girdle. In contrast to butterflies, many moths spin a silken cocoon.

Adult — Several conditions may influence the development of the chrysalis, including humidity, temperature, and/or day length. Emergence time usually coincides with host plant availability. Adults spend their entire life mating, laying eggs, and seeking nectar. Adult butterflies live from about a week to several months. A few spend the winter in outbuildings or logs, but most die before winter.

Commonly Attracted Butterflies in Nebraska

In Nebraska, some of the most easily attracted butterflies, moths, and skippers include:

- Alfalfa Butterfly — *Colias eurytheme* Boisduval
- American Painted Lady — *Vanessa virginiensis* (Drury)
- Cabbage Butterfly — *Pieris rapae* (L.)
- Checkered Skipper — *Pyrgus communis* (Grote)
- Clouded Sulphur — *Colias philodice* Godart
- Eastern Black Swallowtail — *Papilio polyxenes asterius* Stoll
- Eastern Tailed Blue — *Cupido comyntas* (Godart)
- Gorgone Checkerspot — *Chlosyne gorgone carlota* (Reakirt)
- Gray Hairstreak — *Strymon melinus* Hübner
- Great Spangled Fritillary — *Speyeria cybele* (Fabricius)
- Monarch — *Danaus plexippus* (L.)
- Painted Lady — *Vanessa cardui* (L.)
- Pearl Crescent — *Phyciodes tharos* (Drury)
- Red Admiral — *Vanessa atalanta* (L.)
- Sachem — *Atalopedes campestris* (Boisduval)
- Snowberry Clearwing — *Hemaris diffinis* (Boisduval)
- Spring Azure — *Celastrina neglecta* (W. H. Edwards)

Table II. Plants to attract butterflies.

| Common Name | Scientific Name | Select Varieties | Bloom Color | Ht./Spread | Bloom Time | Remarks | Larval Source | Nectar Source |
|---|-----------------------------------|---|-----------------------|------------|------------|--|---------------|---------------|
| Perennials Attractive to Butterflies | | | | | | | | |
| Alfalfa | <i>Medicago sativa</i> | many | purple | 16"-20" | May-Sept | Old plants lodge | X | X |
| Allium, Ornamental | <i>Allium senescens</i> | 'Glaucum' | lavender | 12"-12" | July-Sept | Long bloom season | X | X |
| Aster, Dwarf | <i>Aster x dumosus</i> | 'Woods Dwarfs' | pink, purple, white | 48"-36" | Sept-Oct | Dwarf, very little seed production | X | X |
| Aster, Fendler's | <i>Aster fendleri</i> | 'My Antonia' | purple, white | 6"-12" | July-Sept | Native, good drainage needed | X | X |
| Aster, New England | <i>Aster novae-angliae</i> | 'Purple Dome' | pink, purple, white | 36"-48" | Sept-Oct | Taller aster, late | X | X |
| Bee Balm | <i>Monarda</i> spp. | 'Jacob Kline' | pink-lavender, red | 18"-18" | June-Aug | Colonizes | | X |
| Black-eyed Susan | <i>Rudbeckia hirta</i> | 'Prairie Sun' | yellow-orange | 24"-24" | July-Sept | Seeds itself, treat as an annual | X | |
| Black-eyed Susan | <i>Rudbeckia fulgida</i> | 'Goldstrum' | yellow-orange | 18"-24" | July-Sept | Seeds itself | X | |
| Blanket Flower | <i>Gaillardia aristata</i> | 'Baby Cole', 'Goblin', 'Burgunder' | yellow-red | 18"-24" | June-Sept | Seeds itself, can be short lived | X | |
| Catmint | <i>Nepeta</i> spp. | 'Fassen's', 'Six Hills Hybrids', 'Walker's Low' | lavender | 18"-18" | May-Oct | Several species | | X |
| Chrysanthemum | <i>Dendranthema</i> spp. | many | assorted | varies | Aug-Oct | Hardiness varies | X | |
| Coneflower, Narrowleaf | <i>Echinacea angustifolia</i> | species type | pink | 36"-24" | June-Aug | Native | X | X |
| Coneflower, Purple | <i>Echinacea purpurea</i> | 'Magus', 'Cygnet White' | purple, pink, white | 36"-24" | June-July | Native | X | X |
| Coneflower, Pale | <i>Echinacea pallida</i> | species type | lavender | 30"-24" | June-July | Native, most drought tolerant of the species | X | X |
| Coreopsis, Threadleaf | <i>Coreopsis verticillata</i> | 'Moonbeam', 'Zagreb' | yellow | 18"-24" | June-Sept | Long bloom season, drought tolerant | X | |
| Daylily | <i>Hemerocallis</i> spp. | many | assorted, warm colors | varies | June-Sept | Variable | | X |
| Gayfeather, Dotted | <i>Liatris punctata</i> | species type | rose-purple | 20"-24" | Sept | Native | X | |
| Gayfeather, Tall | <i>Liatris pycnostachya</i> | 'Eureka' | rose-purple | 60"-24" | June-Aug | Native | X | |
| Gayfeather, Spike | <i>Liatris spicata</i> | 'Kobold', 'Floristan White' | rose-purple, white | | June-July | Cut flower | X | |
| Goldenrod species | <i>Solidago</i> spp. | 'Fireworks', 'Golden Baby' | yellow | varies | July-Sept | Cut back for rebloom, good dried | X | |
| Goldenrod, Stiff | <i>Solidago rigida</i> | species type | yellow | 30"-10" | July-Aug | Native | X | |
| Hollyhock | <i>Alcea rosea</i> | many | assorted | 72"-12" | May-Aug | Rust susceptible, allow to reseed | X | X |
| Ironweed | <i>Vernonia fasciculata</i> | species type | red-violet | 48"-24" | July-Sept | Prefers moist soils | X | |
| Joe-Pye Weed | <i>Eupatorium purpureum</i> | 'Gateway' | purple | 72"-48" | July-Sept | Better in eastern Nebraska, takes wet sites | X | |
| Lavender | <i>Lavandula angustifolia</i> | 'Provence', 'Hidcote' | lavender-blue | 18"-18" | June-July | Semi-woody | X | X |
| Leadplant | <i>Amorpha canescens</i> | species type | lavender-blue | 36"-36" | June-July | Native, semi-woody, drought tolerant | X | |
| Milkweed, Butterfly | <i>Asclepias tuberosa</i> | species type, 'Hello Yellow' | orange, red, yellow | 24"-24" | June-July | Native, difficult to transplant | X | X |
| Milkweed, Common | <i>Asclepias speciosa</i> | species type | pink | 28"-15" | May-Aug | Common native milkweed, can be weedy | X | X |
| Milkweed, Swamp | <i>Asclepias incarnata</i> | species type, 'Ice Ballet' | pink, white | 48"-15" | July-Aug | Best in moist sites | X | X |
| Pasqueflower | <i>Pulsatilla</i> spp. | 'Rubra', 'Heiler Hybrids' | purple, white, red | 12"-12" | Apr-May | Native, very early | | X |
| Phlox, Prairie | <i>Phlox pilosa</i> | 'Eco Happy Traveler' | rose-pink | 15"-15" | May-June | Native, fragrant | X | |
| Pinks, Cheddar | <i>Dianthus gratianopolitanus</i> | 'Spotti', 'Dottie', 'Tiny Rubies' | white, rose-pink, red | 8"-8" | May-June | Fragrant | X | |
| Pitcher Sage | <i>Salvia azurea</i> | 'Nekan' | blue, pink, white | 24"-48" | Aug-Sept | Native | | X |
| Prairie Clover, Purple | <i>Dalea purpureum</i> | 'Stephanie' | purple | 20"-15" | June-July | Native | X | X |
| Prairie Clover, Silky | <i>Dalea villosa</i> | 'Sandhills Satin' | pink | 15"-24" | July-Aug | Sandy sites | X | X |
| Primrose, Missouri | <i>Oenothera macrocarpa</i> | 'Commander Campfire' | yellow | 15"-30" | July-Aug | Drought tolerant | X | X |
| Pussytoes | <i>Antennaria</i> spp. | species type | white, pink | 2"-12" | May-June | Tiny groundcover for dry sites | X | X |
| Sea Lavender | <i>Limonium latifolium</i> | species type | blue, white | 24"-24" | July-Aug | | X | |
| Sedum Low varieties | <i>Sedum</i> spp. | 'Gold Carpet', 'Dragon's Blood' | yellow, red, pink | 6"-18" | June-July | Very adaptable | | X |
| Sedum Tall varieties | <i>Sedum</i> spp. | 'Indian Chief', 'Autumn Fire' | pink, bronze | 24"-18" | Aug-Sept | Cut or dried flowers | | X |
| Shasta Daisy | <i>Leucanthemum</i> x | 'Alaska', 'Becky', 'Crazy Daisy' | white | 24"-36" | June-July | Excellent cut flower | | X |
| Sweet Clover | <i>Melilotus</i> spp. | species type | yellow, white | 30"-30" | May-Oct | Consumed by domestic livestock | X | X |
| White Clover | <i>Trifolium repens</i> | several | white | 15"-15" | May-Oct | Can be a lawn weed | X | X |
| Yarrow spp. | <i>Achillea millefolium</i> | 'Paprika', 'Terra Cotta' | assorted | 24"-36" | June-July | Prefers low fertility | X | X |

| Common Name | Scientific Name | Select Varieties | Bloom Color | Ht./Spread | Bloom Time | Remarks | Larval Source | Nectar Source |
|--|--|-----------------------------------|--|-------------------|--------------------|---|---------------|---------------|
| Annuals Attractive to Butterflies | | | | | | | | |
| Ageratum | <i>Ageratum x hybrida</i> | 'Blue Horizon', 'Blue Pacific' | blue, lavender, white | varies | June-Oct | Trim off old flowers for repeat bloom | X | |
| Broccoli | <i>Brassica</i> spp. | 'Packman' | green | 18"-12" | June | Replant for fall crop | X | |
| China Aster | <i>Callistephus chinensis</i> | many | assorted | 12"-12" | June-Sept | Replant for fall crop | X | |
| Cosmos | <i>Cosmos bipinnatus</i> | 'Sensation', 'Shellleaf' | white, pink, crimson | 60"-18" | June-Oct | Avoid overwatering | X | |
| Flowering Cabbage | <i>Brassica</i> spp. | 'Color Up' | reds, pinks, greens | 18"-12" | Aug-Oct | Best in cool weather | X | |
| Flowering Tobacco | <i>Nicotiana alata</i> | many | white, pink, red | 36"-12" | June-Sept | Straight species is fragrant, white | X | |
| Globe Candytuft | <i>Iberis umbellata</i> | many | assorted | 12"-6" | June-Oct | Fragrant | X | |
| Gomphrena | <i>Gomphrena globosa</i> | 'Strawberry Fields' | assorted | 30"-18" | June-Sept | Excellent for drying, clover-like flowers | X | |
| Marigold, African Marigold, French | <i>Tagetes erecta</i> <i>Tagetes patula</i> | many many | yellow, orange yellow, orange, bronze | 40"-18" 12"-6" | May-Oct May-Oct | Natural nematode control Border plant | X X | |
| Nasturtium | <i>Tropaeolum majus</i> | many | yellow, orange, red | 12"-8" | May-Oct | Tolerates poor soil | X | |
| Petunia | <i>Petunia</i> spp. | many | assorted | 18"-12" | May-Oct | Provides season-long color | X | |
| Salvia | <i>Salvia</i> spp. | many | red, blue | 12"-15" | May-Oct | Upright plants, also attract hummingbirds | X | |
| Scabiosa | <i>Scabiosa atropurpurea</i> | several | blue, pink | 20"-15" | May-Oct | Good for drying | X | |
| Snapdragon | <i>Antirrhinum majus</i> | many | assorted | varies | April-Oct | Cutting flower, can overwinter | X | X |
| Statice | <i>Limonium sinuatum</i> | 'Blue River', 'Forever Gold' | white, lavender, yellow | 18"-12" | July-Oct | Good cutting flower or dried | X | |
| Sunflower | <i>Helianthus annuus</i> | many | yellow, orange, bronze | varies | July-Sept | Bird seed, cut flower | X | X |
| Sweet Alyssum | <i>Lobularia maritima</i> | 'Carpet of Snow', 'Easter Basket' | white, lavender | 4"-6" | May-Oct | Low trailing plant, fragrant | X | |
| Sweet William | <i>Dianthus barbatus</i> | many | assorted | 12"-12" | June-Sept | Annual or biennial | X | |
| Verbena | <i>Verbena x hybrida</i> | many | blue, white, pink | 12" | June-Sept | Best in cool weather, spreading | X | |
| Zinnia | <i>Zinnia angustifolia</i> | 'Crystal White', others | white, gold, yellow | 12-16" | June-Oct | Hot, dry areas | X | |
| Zinnia | <i>Zinnia elegans</i> | many | assorted | varies | June-Oct | Cut flowers, powdery mildew | X | |
| Herbs Attractive to Butterflies | | | | | | | | |
| Catnip | <i>Nepeta cataria</i> | species type | blue, purple | 12"-18" | June-Aug | Many good cultivars, needs dry sites | X | |
| Chives | <i>Allium schoenoprasum</i> | species type | pink | 12"-12" | May | Perennial, reseeds | X | |
| Dill | <i>Anethum graveolens</i> | 'Elegans' | yellow | 36"-24" | July-Sept | Annual, reseeds | X | X |
| Mint | <i>Mentha</i> spp. | many types | pink, white | 24"-24" | May-Sept | Many types | X | |
| Oregano | <i>Origanum vulgare</i> | species type | pink, white | 24"-24" | July-Sept | Many uses | X | |
| Parsley | <i>Petroselinum crispum</i> | varies | greenish | 24"-18" | June-Oct | Annual or biennial, several types | X | X |
| Sweet Fennel | <i>Foeniculum vulgare</i> | species type | yellow | 48"-18" | July-Sept | Licorice flavored | X | X |
| Biennials Attractive to Butterflies | | | | | | | | |
| Dame's Rocket | <i>Hesperis matronalis</i> | species type | lavender | 36"-18" | May-June | Naturalizes, somewhat invasive | X | |
| Queen Anne's Lace | <i>Daucus carota</i> | species type | white | 72"-48" | June-July | Also known as wild carrot | X | X |
| Standing Cypress | <i>Ipomopsis rubra</i> | species type | red | 30"-12" | July-Oct | Fine texture | X | |
| Shrubs Attractive to Butterflies | | | | | | | | |
| Butterfly Bush | <i>Buddleia davidii</i> | many | purple, blue, white, pink | 48"-48" | July-Oct | Cut to ground in spring | X | |
| Cinquefoil | <i>Potentilla</i> spp. | many | white, orange, yellow | 36"-36" | June-frost | Prune in late winter | X | |
| Chokecherry | <i>Prunus virginiana</i> | 'Shubert' | white | 15'-10' | May | Fruit attractive to birds | X | X |
| Cotoneaster | <i>Cotoneaster</i> spp. | many | white, pink | varies | May-June | Attractive fruit | X | |
| Lilac | <i>Syringa</i> spp. | many | white, pink, violet | 8'-12' | May | Fragrant, susceptible to scale and borers | X | X |
| Mockorange | <i>Philadelphus</i> spp. | 'Minnesota Snowflake' | white | 5/10"-5/10' | May-June | Very fragrant | X | |
| Privet | <i>Ligustrum</i> spp. | many | white | 10'-6' | May-June | Often used as a hedge | X | |
| Spirea | <i>Spiraea</i> spp. | many | white, pink | 3/8'-10' | May-June | 'Vanhoutte' is a popular type | X | |
| Viburnum | <i>Viburnum</i> spp. | many | white, pink | varies | May-June | Some fragrant, good fruit | X | |
| Wild Plum | <i>Prunus americana</i> | species type | white | 15'-15' | May | Good for eating | X | X |

Tawny-edged Skipper — *Polites themistocles* (Latreille)
Tiger Swallowtail — *Papilio glaucus* (L.)
Variegated Fritillary — *Euptoieta claudia* (Cramer)
White-lined Sphinx — *Hyles lineata* (Fabricius)

Attracting Butterflies

Although proper plant selection and placement are essential to attract butterflies, the location and characteristics of the site are important, as are additional features like rocks. Butterflies like sunny sites and areas sheltered from high winds. Warm, sheltered areas are most needed in the spring and fall. Provide rocks or bricks for pupation sites and for basking and warming in the sun. A water source for puddling and drinking is important. Butterflies require food plants for their larval stages and nectar plants for their adult stage. Some larvae feed on specific host plants, while others will feed on a variety of plants. Including both larval host plants and adult nectar plants in your butterfly garden will increase the chances of attracting a greater number and variety of butterflies. Listed in *Table II* are plants that can be used in Nebraska landscapes to attract butterflies.

Types of Plants that Attract Butterflies

Plants that attract butterflies are classified as either a food source, a nectar source, or both. Some of these plants will also provide protection from predators, shelter, a site to lay eggs, and a place for butterflies to attach themselves while pupating. It can be relatively simple to attract butterflies to a garden that suits your landscape tastes and needs. Many native or introduced annuals, perennials, herbs, vines, grasses, shrubs, and trees provide nectar flowers or meet other butterfly requirements. The time of flowering, duration of bloom, flower color, and plant size are all important considerations when selecting plants to attract butterflies. Include an assortment of plants for season-long bloom. If you want to attract a greater variety of butterflies, you will need to add plants that are not only a good source of nectar but a good source of food as well.

Many plants that attract butterflies, especially trees and shrubs, may already be present in a specific area. Although weed species are generally not welcome in a garden, allowing them to grow under supervision may be an option, since many of these plants support butterflies. Be cautious about using plants like blue flax (*Linum perenne*) and gray-head prairie coneflower (*Ratibida pinnata*) that readily reseed and may dominate garden sites.

Plants with clusters of flowers or large blooms provide easier landing sites for butterflies than plants with small, single flowers. Planting masses of single kinds of plants usually will attract more butterflies since there is more nectar available at a single stop. Select plants adapted to your site and location, and develop a plan for the butterfly garden. Several books containing sample butterfly garden plans are available in bookstores.

It is difficult to have a successful butterfly garden in locations where insecticides are used. Insecticides can kill butterflies as well as other useful insects. Plants that attract butterflies also may attract other forms of wildlife, including bees and wasps. Most bees and wasps, busy collecting pollen and nectar, are not likely to sting if left undisturbed. However, if you are allergic to bee and wasp stings, be careful! Even biological controls, such as BT (*Bacillus thuringiensis*), will kill butterfly larvae. When

treating for insect pests, always consider nonchemical methods of pest control before turning to pesticides.

Annuals — Annuals are plants that grow, flower, and complete their life cycle in one season. They come in a wide range of growth habits, flower types, and colors. Removal of old flowers (deadheading) may be necessary to encourage the continuous bloom that provides butterflies with an extended good source of nectar.

Biennials — Biennials form roots and rosettes of foliage the first year, flower and set seed the second year, and then die. They often persist in the garden for many years if some of the seedlings are allowed to remain.

Herbs — Herbs have many uses, among them flavoring food. Butterflies are attracted to many of the herbs we use for flavoring, and use them as a nectar source as well as a larval food source.

Shrubs — Most woody shrubs have a limited number of days of flower duration. However, they can provide good, short-term nectar sources as well as long-term butterfly habitats.

Trees — Trees can serve vital functions as larval food hosts, nectar sources, and protection. Some trees that are good for attracting butterflies include birch (*Betula spp.*), cherry (*Prunus spp.*), cottonwood (*Populus deltoides*), elm (*Ulmus spp.*), hackberry (*Celtis occidentalis*), hawthorn (*Crataegus spp.*), linden/basswood (*Tilia spp.*), oak (*Quercus spp.*), plum (*Prunus spp.*), red cedar (*Juniperus virginiana*), Russian olive (*Elaeagnus angustifolia*), and willow (*Salix spp.*).

Herbaceous Perennials — Herbaceous perennial plants are nonwoody plants that live and flower for more than two years. Some herbaceous perennials that are beneficial to butterflies, like alfalfa and clover, may not be suitable for a small garden, but they may be encouraged to grow in surrounding areas.

Grasses — Grasses can be native or introduced, annuals or perennials. Their height can vary from a few inches to several feet. They can provide larval food and protection for butterflies.

Resources

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