

# Fluttering Through Gardening

Creating a Butterfly Habitat



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## **There are many reasons to start a butterfly garden in your backyard or on your windowsill.**

### **The four main goals of a butterfly garden are:**

1. Planting gardens is environmentally sound and helps bring plants and flowers back into populated, urban areas.
2. Bringing native plants back into your local area, as these are often driven out by commercial and foreign varieties in many homes and gardens.
3. Helping to preserve many species of butterflies that are threatened by the ongoing destruction of their habitat.
4. Enjoying some of nature's most beautiful creatures by attracting them and nurturing them around your home.

It isn't difficult to make your backyard home to dozens at a time, giving you hours of enjoyment and helping the environment at the same time.

Even a planter attached to the windowsill can bring you several butterflies at a time. They may live nearby in a park or on a neighborhood tree and use your flower box as their primary source of food, dropping by for a snack several times a day. With the right selection of flowers, you may even be surprised to find a few caterpillars as well!

## Pollinator Garden in a Pot

*Pollinators are always welcome visitors in the garden. They fly in, sip a little nectar, and then fly on. You can encourage them to stay, however, by growing plants that attract them. And now you can invite them onto the deck or patio as well. Make a container garden "restaurant" just for them! Certify your pot as a Pollinator habitat with Monarchs Across Georgia by downloading the form at [www.monarchsacross.ga.org](http://www.monarchsacross.ga.org).*

### Materials:

- An area with at least 6-hours of sunshine
- Large container or pot at least 18" in diameter
- Milkweed (nectar plant for numerous species of butterflies and monarch butterfly host plant)
- 5 additional hosts plants
- 4 nectar plants that bloom in the spring
- 4 nectar plants that bloom in the summer
- 4 nectar plants that bloom in the fall
- Puddling source
- Flat rock for basking site

### Steps:

1. Begin with the largest plant. Tap the bottom of its container to loosen it, then pull it free.
2. Fluff or scrape the roots to loosen them from the root ball; this will allow them to expand after transplanting instead of continuing to grow in a circle as it may have in its original pot.
3. Position it along one edge of the large pot and nestle it into the soil. Pack the soil in firmly around the plant.
4. Continue planting the remaining plants around the edge of the pot, working from largest to smallest. (Be sure to pack soil firmly around each plant.) Angle them outward for a bushy, cascading look.
5. Next place a flat rock for basking and a puddling station next to the pot you have planted. (A puddling station can be created by filling a flowerpot saucer with sand and keeping it moist.)
6. Wait for the plants to bloom, then watch for pollinators!

## Adult Nectar Plants

### **\*\*Top 10 Nectar Plants\*\***

- Aster (*Asters spp.*)—summer/fall blooming
- Black-eyed Susan (*Rudbeckia hirta*)—summer/fall blooming
- Butterfly bush (*Buddleia sp.*)—summer/fall blooming
- Butterfly weed (*Asclepias spp.*)—summer blooming
- Coreopsis (*Coresopsis spp.*)—spring/summer/fall blooming
- Joe-Pye weed (*Eupatorium purpureu*)—fall blooming
- Lantana (*Lantana spp.*)—summer blooming
- Liatris (*Liatris spicata*)—summer blooming
- Purple coneflower (*Echinacea purpurea*)—summer blooming
- Yarrow (*Achillea spp.*)—spring/summer/fall blooming



### Other Nectar Choices

1. Ageratum, *Ageratum houstonianum*—spring blooming
2. Blackbeard, *Caryopetris x clandonensis*—summer/fall blooming
3. Celosia, *Celosia argentea var. spicata*—spring/summer/fall blooming
4. Cosmos, *Cosmos spp*—spring/summer/fall blooming
5. Dianthus, *Dianthus spp.* –spring blooming
6. Gaillardia, *Gaillardia spp.* –summer/fall blooming
7. Goldenrod, *Solidago sp.* –summer/fall blooming
8. Heliotrope, *Heliotropium amplexicaule* –spring blooming
9. Lemon shrub marigold, *Tagetes lemmonii* –spring/summer blooming
10. Lobelia, *Lobelia sp.* –spring/summer blooming
11. Mexican Sunflower, *Tithonia rotundifolia* –summer/fall blooming
12. Verbena, *Glandularia spp* –spring/summer/fall blooming
13. Pentas, *Pentas lanceolata* –spring/summer/fall blooming
14. Stokes Aster, *Stokesia laevis*—spring/summer blooming
15. Tarragon, *Artemisia drancunculus* –spring/summer blooming
16. Salvia Species –spring/summer/fall blooming

### Butterfly Host Plant

1. Aster *Aster sp.* -Gorgone Checkerspot, American Painted Lady, Long-tailed Skipper, Painted Lady, Pearl Crescent, Silvery Checkerspot
2. Black-eyed Susan *Rudbeckia sp.* -Silvery Checkerspot
3. Canna *Canna flaccida* -Brazilian Skipper
4. Clover *Trifolium sp.*, *Melilotus sp.* -Alfalfa Butterfly (Orange Sulphur), Blues, Clouded Sulphur, Common Sulphur, Gray Hairstreak, Sleepy Orange
5. Coneflowers *Echinacea sp.* -Silvery Checkerspot
6. Ginger *Asarum canadense*- Pipevine Swallowtail
7. Lupine *Lupinus sp.* -Alfalfa Butterfly (Orange Sulphur), Clouded Sulphur, Frosted Elfin, Pine Elfin, various blues
8. Mountain Mint *Pycnanthemum sp.*- Gray Hairstreak
9. Pansy, Field *Viola rafinesquii*- Variegated Fritillary
10. Stonecrop *Sedum sp.* -Buckeye, Variegated Fritillary
11. Strawberry *Fragaria virginiana* -Variegated Fritillary, Gulf Fritillary
12. Sunflowers *Helianthus sp.* -Gorgone Checkerspot, Painted Lady, Silvery Checkerspot
13. Wild-Indigo *Baptisia sp.* -Frosted Elfin, Alfalfa Butterfly (Orange Sulphur), Dogface, Eastern Tailed Blue, Hoary Edge, Mottled Dusky Wing, Wild Indigo Duskywing, Zarucco Dusky Wing
14. Cabbage- Checkered White
15. Carrots- Black Swallowtail
16. Celery- Black Swallowtail
17. Daisy *Chrysanthemum sp.* -American Painted Lady, Painted Lady
18. Dandelion *Taraxacum officinale* -Giant Leopard Moth, Woolly Bear (Isabella Tiger Moth)
19. Dill *Apiaceae family* (parsley)- Black Swallowtail
20. Everlasting *Anaphalis sp.*- American Painted Lady, Painted Lady
21. Fennel -Black Swallowtail
22. Hollyhock *Althaea rosea* -Checkered Skipper, Painted Lady, Gray Hairstreak
23. Parsley -Black Swallowtail
24. Rue *Ruta graveolens*- Black Swallowtail
25. Snapdragon *Antirrhinum sp.* -Buckeye



## Ready to Expand: Creating a Butterfly/Pollinator Garden

In a nutshell the basic design elements are (food, water, shelter and space):

- Sunny locations (at least 6-hours per day)
- Shelter from wind
- Nectar-rich blooms
- Host plants where they can lay eggs
- Moist sand or mud for 'puddling'
- Flat rocks or other light colored flat surfaces for basking



When planning your garden, don't forget a nice observation spot for yourself so you can enjoy the results of your work!

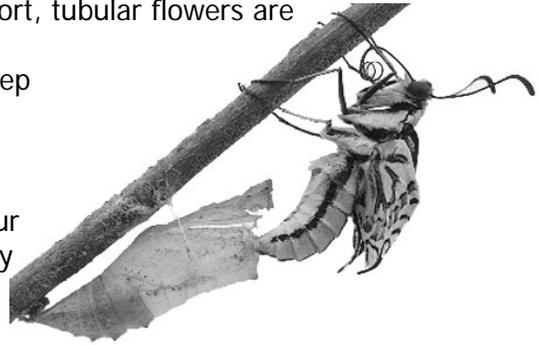
*Add plants that will support the various stages in a butterfly's life:*

- Egg - two days
- Caterpillar - two weeks
- Pupa (chrysalis applies to the butterfly, cocoon becomes a moth) - two weeks
- Adult - two weeks to two months

### Butterfly Gardening Tips

1. Do not use pesticides and herbicides
  - a. Most kill butterflies, caterpillars, and beneficial insects.
  - b. Harmful insects quickly become immune.
  - c. Predatory insects and birds will control pests, given time. They may sometimes snack on your butterflies and caterpillars, but you can protect caterpillars by hand-raising them in a cage or enclosed area.
2. Choose a sunny, protected area
  - a. An area receiving at least 5 to 6 hours of sun daily is preferable.
  - b. Most plants favored by butterflies prefer sun to partial shade.
  - c. Butterflies need shelter from strong winds.
3. Plant nectar flowers for adult butterflies
  - a. Choose perennials and annuals so that some butterfly favorite will be blooming from early spring through late fall.
  - b. Plant large areas of one plant species or one color.
  - c. Native plants are usually preferred.

- d. Choose single or semi-double blooms over highly double flowers; extremely fancy blooms generally have less nectar, and it is more difficult for butterflies to obtain.
  - e. Flat-topped blossoms or clusters of short, tubular flowers are favorites.
  - f. Deadhead (cut off dead blooms) to keep plants flowering abundantly.
4. Plant host plants for butterfly caterpillars
- a. You'll be able to observe life cycles.
  - b. Female butterflies will be drawn to your garden and encouraged to stay and lay eggs.
  - c. Without plants for caterpillars, there would be no butterflies.
  - d. Larvae do eat leaves and flowers of host plants but don't usually kill the plants, as so few caterpillars survive more than a few days. Chewed foliage may be unsightly, so screen host plants from main viewing area. Be sure you've planted enough to support the growing caterpillars.
    1. A special host plant: The caterpillar of the monarch butterfly eats only the leaves of the butterfly weed, so you'll want to plant some butterfly weeds in your garden to make certain these butterflies have a food source. It takes a year or two for these perennials to establish themselves in a garden. Once they do, they'll form a plant mass about three feet tall and two feet wide, and they'll be covered with bright orange flowers. Adult monarchs and a host of other butterflies are attracted to the flowers for their nectar. (Don't confuse the butterfly weed (*Asclepias tuberosa*) with butterfly bush (*Buddleia* sp.), a completely different plant.)
    2. Another perennial that attracts both adult butterflies and their caterpillars is sedum. The sedum is a primary food source for the caterpillar of the variegated fritillary. There are many varieties of sedum, from low-growing groundcovers to taller plants. 'Autumn Joy' grows to about two feet tall, and in the late summer it bears clusters of flowers that start out pink and slowly turn coppery-red. This sedum is a drought-tolerant, easy-to-grow plant that's a great addition to any perennial border.
5. Provide water
- a. Butterflies will drink from shallow puddles and dew on leaves.
  - b. They will also drink and "puddle" on damp or muddy areas.
6. If space is limited, try planting butterfly-attracting flowers in containers, window boxes or hanging baskets.
7. Provide rocks or bare soil to allow butterflies to bask in the sun.
8. Research before planting
- a. Host plants need to be for larvae of butterflies found in your area.
  - b. Determine if flowers/plants prefer dry or moist conditions, full or partial sun, acid or alkaline soil, etc.
  - c. Plants grow; don't place potentially large shrubs/trees where they will block sunlight from smaller flowers.



- d. Start with a few of the butterflies' favorite flowers.
  - e. Observe plants in the wild, in gardens of others, in parks and at plant nurseries to find what grows well and attracts butterflies.
9. Butterfly gardens attract other wildlife, primarily birds and bees.
- a. Bees rarely sting when feeding.
  - b. Use common sense when working in the garden around bees.
  - c. Butterfly gardens do not attract rats; rodents go where they can find food.
10. Be patient! It may take butterflies more than one growing season to find your new garden.

**To have a successful butterfly and hummingbird garden, consider several things before planting.**

**Location**

- Most butterflies prefer to rest and feed in full sunshine, so the ideal place would have six or more hours of daily sunlight in June.
- If the site is grassy, remove the grass first. Tilling may work, but some grasses, such as Bermuda and centipede, can sprout by the millions from the chopped-up pieces. You may need to use a contact herbicide.
- Picture how you and others will view the garden and the butterflies. Putting larger plants to the rear and smaller plants up front makes sense. So does putting a butterfly feeding dish or birdbath where you can easily see it.
- Ready access to water will make watering and watching more convenient. A small bench or chair nearby will make the butterfly garden a great morning or evening resting spot.



**Soil Preparation**

- The single most important thing you can do for your garden is prepare the soil. Use a shovel or tiller to turn it up 12 inches deep over the entire area.
- Add several bushels of compost, rotted pine bark or manure. Then till again until the soil is loose. Your plants will thrive in well-drained soil with lots of organic matter.

**Avoid Pesticides**

- Anything used to kill insects won't be good for a butterfly garden.
- One way to control pests is to gently wash the bugs off plants with a pressure nozzle on the garden hose. Many will drown. Insect predators will eat others on the ground.
- Do this in the morning, when bugs are active, to let the foliage dry before night. A few chewed leaves is a small price to pay for your butterflies' health.

- A good side effect of the decrease in pesticide use is the increase of natural enemies. These are insects such as spiders, lacewings, ladybird beetles, and ground beetles that actually help to control unwanted pests.

### After Frost

- After a killing frost, let your plants dry down naturally. Around Thanksgiving, or Christmas if we have a warm fall, cut your butterfly bush and 'Miss Huff' *Lantana* stems to 6 inches high.
- With your lawn mower blade on high (3 inches or so), mow everything but the butterfly bush, lantana and other woody shrubs. It's best if you use a mulching blade.
- Leave the debris on the ground, and cover it with an inch or two of fresh pine straw, as a few species of butterflies will overwinter in the fallen leaves. Mound leaves around the *Lantana* and butterfly-bush trunks.



### Spring Replanting

- Around May 1, scrape away mulch where you want new butterfly plants and install them as you did your first planting.
- Return the mulch and pine straw to the freshly planted area, and fertilize your whole garden. Water in the fertilizer thoroughly, and weed occasionally, as needed.

### Host Plants

Butterfly gardening involves planning your garden to attract, retain, and encourage butterfly populations. Flowers of similar colors grouped together are more attractive to both butterflies and the gardener.

You should select a variety of nectar-producing plants with the aim of providing flowers in bloom throughout the season. This will entice a continuous succession of new visitors to a yard. It is especially important to have flowers in mid to late summer, when most butterflies are active. Flowers with multiple florets that produce abundant nectar are ideal.

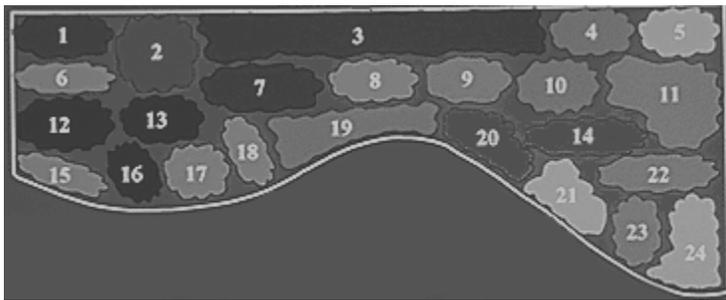
You can supplement the garden's flower nectar with a homemade feeder. Made from an inverted baby food or other small jar, such a feeder can be attractive to butterflies. Drill a small hole in the center of the lid and plug it with cotton. Fill the jar with a solution of one part sugar (not honey) to nine parts water. Attach brightly colored fabric petals to the lid to make the feeder more appealing to butterflies. Hang your feeder in a tree near your garden.

Annuals are wonderful butterfly plants because they bloom continuously through the season, providing a steady supply of nectar. Butterflies visit perennial plants, such as coneflowers, lilac, butterfly weed, and asters, regularly. Most plants in the mint family are also good nectar sources for butterflies. Avoid double flowers because they are often bred for showiness, not nectar production.

For successful butterfly gardening, you need to provide food for more than the adult butterflies. You need to provide for their caterpillar forms as well. Butterfly caterpillars have a



Figure 1. A sample butterfly border garden has a large variety of host plants.



- |                      |                       |                             |
|----------------------|-----------------------|-----------------------------|
| 1. Purple coneflower | 6. Peony              | 11. Tawny daylily           |
| 2. Dill              | 7. Turtlehead         | 12. 'Marine' heliotrope     |
| 3. Hollyhock         | 8. Swamp milkweed     | 13. Gayfeather              |
| 4. Joe-Pye weed      | 9. Yarrow             | 14. Butterfly weed          |
| 5. Globe centaurea   | 10. Queen Anne's lace | 15. Petunia                 |
|                      |                       | 16. Mountain bluet          |
|                      |                       | 17. Annual aster            |
|                      |                       | 18. 'Autumn Joy' sedum      |
|                      |                       | 19. Rock cress              |
|                      |                       | 20. French marigold         |
|                      |                       | 21. 'Happy Returns' daylily |
|                      |                       | 22. Blanket flower          |
|                      |                       | 23. Nasturtium              |
|                      |                       | 24. Goldenrod               |

limited host range. Most caterpillars feed on leaves; although some develop on the reproductive parts of flowers or seeds.

## Larval Host Plants

### Caterpillar Food Plant

Asters (*Asters spp.*)

Bean family, including weedy legumes such as beggar's tick (*Desmodium spp.*), hog peanut (*Amphicarpa bracteata*), kudzu (*Pueraria lobata*), and wisteria (*Wisteria sinensis*)

Grasses

Black Locust (*Robinia pseudoacacia*)

Mustard family, including cabbage

*Cassia sp.*  
(i.e. Sicklepod, Partridge Pea)

Wild Cherry (*Prunus Aviam*)

Dogwood (*Cornus spp.*)

### Butterfly

Pearl Crescent  
Silvery Checkerspot

Long-tailed Skipper

Fiery Skipper  
Satyrs  
Grass Nymphs

Silver-spotted Skipper  
Zarucco Duskywing

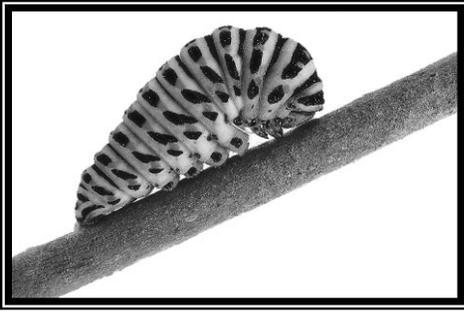
Cabbage White  
Great Southern White

Sleepy Orange  
Cloudless Sulphur  
Little Yellow

Spring Azure  
Eastern Tiger Swallowtail  
Striped Hairstreak  
Red-spotted Purple  
Coral Hairstreak

Spring Azure

Elm ( <i>Ulmus spp.</i> )	Question Mark Eastern Comma Mourning Cloak
Parsley family, including fennel and dill	Black Swallowtail Anise Swallowtail
Hackberry ( <i>Celtis occidentalis</i> )	American Snout Question Mark Hackberry Emperor Tawny Emperor Mourning Cloak
Milkweed ( <i>Asclepias spp.</i> )	Monarch Queen
Mistletoe ( <i>Phoradendron spp.</i> )	Great Purple Hairstreak
Nettle ( <i>Urtica spp.</i> )	Red Admiral Eastern Comma Question Mark
Oaks ( <i>Quercas spp.</i> )	Banded Hairstreak Horace's Duskywing Juvenal's Duskywing Southern Hairstreak
Passionvine ( <i>Passiflora incarnata</i> )	Gulf Fritillary Zebra Variegated Fritillary
Pawpaw ( <i>Asimina triloba</i> )	Zebra Swallowtail
Plantain ( <i>Plantago spp.</i> ) and Toadflax ( <i>Linaria sp.</i> )	Common Buckeye Baltimore Checkerspot
Redbud ( <i>Cercis Canadensis</i> )	Henry's Elfin
Sassafras ( <i>Sassafras spp.</i> )	Tiger Swallowtail
Spicebush ( <i>Lindera benzoin</i> )	Spicebush Swallowtail
Senna ( <i>Cassia spp.</i> )	Cloudless Sulphur Sleepy Orange
Tulip Tree ( <i>Lirodendroan tulipifera</i> )	Eastern Tiger Swallowtail Spicebush Swallowtail
Violets ( <i>Viola sp.</i> )	Variegated Fritillary Diana Fritillary
Willow	Mourning Cloak Viceroy



**Black Swallowtail Caterpillar  
(Fennel, Dill, Parsley, and Queen's Anne  
Lace)**

## Adult Nectar Plants

### **\*\*Top 10 Nectar Plants\*\***

- Aster (*Asters spp.*)
- Black-eyed Susan (*Rudbeckia hirta*)
- Butterfly bush (*Buddleia sp.*)
- Butterfly weed (*Asclepias spp.*)
- Coreopsis (*Coresopsis spp.*)
- Joe-Pye weed (*Eupatorium purpureu*)
- Lantana (*Lantana spp.*)
- Liatris (*Liatris spicata*)
- Purple coneflower (*Echinacea purpurea*)
- Yarrow (*Achillea spp.*)



## Behaviors to Watch



### **Feeding**

Most species of local butterflies use flower nectar as their primary food source. This sugar-rich material is required for energy used in flight. Very long-lived tropical butterflies in Florida, of the family Heliconiidae, also feed on pollen.

Some butterflies, such as the Mourning Cloak (Nymphalidae: *Nymphalis antiopa*) and Hackberry (Apaturidae: *Asterocampa celtis*) feed on rotting fruit, sap that oozes from trees, and even dung.

Not all butterflies feed solely on nectar. Other plant materials may even be preferred. Red admirals, commas, question marks, and red-spotted purples are commonly attracted to rotting fruit, carrion, tree sap, urine patches, and dung. While some people may not think of placing such items in their gardens, these materials can serve to increase the diversity of butterfly visitors.

Pieces of apple or banana can be placed on a wooden platform and allowed to ferment. Or, a "sugaring" solution consisting of one can of beer, one pound of brown sugar, one half cup black molasses and one or two mashed, overripe bananas can be prepared.

This solution is placed on inexpensive kitchen sponges, which are then hung in strategic locations in the garden, or "painted" on trees. After the sponges have become moldy or soiled they can either be discarded and replaced, or washed and reused. Be aware that this solution will attract many different insects other than just butterflies.

## Basking

Butterflies cannot fly until their body temperature is between 75° and 110°F. Butterflies fly best when their bodies are 80° to 100°F. The air temperature must be at least 60° before the butterfly can fly. If the day is cloudy or cold the butterfly must stop periodically to warm up and rest. Basking is when the butterfly absorbs the heat from the sun and the ground. Butterflies will bask on rocks, wood decks, gravel roads, dirt paths, cement patios, and brick. Some butterflies also raise their body temperature by shivering or rapid movement of their wings.

There are three types of basking.

- Reflectance basking is one form of basking. Butterflies that use reflectance basking have wings that reflect the light. The wings reflect the light into the body. This heats the body up so the butterfly can fly. For this type of basking the lighter in color the scales the better.
- The second type of basking is lateral basking. Lateral baskers sit with their wings closed. These butterflies have dark scales underneath their wings that absorb heat, such as the Clouded Sulfur. Because early spring butterflies have darker wings, their bodies will absorb heat more rapidly.
- The third type is dorsal basking. Monarchs and Painted Lady's are dorsal baskers and sit with their wings open to get the full benefit of the sun. They will also lie close to the ground so that they can absorb the heat from the ground as well.

## Puddling



Puddling is the common behavior of gathering around moist areas (puddle, damp trails, moist tree stump, wet sand) to obtain moisture and the essential nutrients and minerals concentrated at damp sites. Puddling sites are often where water regularly accumulates and then evaporates. When the water evaporates minerals are left behind. Butterflies congregate at the wet edge of mud puddles or wet sandy areas, where they imbibe fluids rich in salts and nutrients. Butterflies require these extra salts and other nutrients to mate successfully. Typically, more males than females puddle. Males pass the nutrients on with their sperm and these nutrients are used by the females for reproduction.

Nutrients gained from puddling also help in producing pheromone. This is the chemical sexual attractant released by males to attract females to mate.

Puddling occurs during the warmest hours of the day, usually between ten A.M. and two P.M. Moths visit the same sites as the butterflies, but at night. Rather than landing directly on the puddle, the butterflies gather at the edge of the puddle to obtain the water without placing itself in danger. Butterflies will continue to visit the sites after the

water has dried up. They are able to obtain the minerals by exuding saliva through the proboscis and then sucking it back up with the nutrients.

### Sweat Sippers

Human perspiration may seem far away from nectar, but several types of butterflies seek out sweat. The tiny drops of liquid are full of salt, a necessity for butterflies. Being the host of a live butterfly is an unusual experience. If you are working up a sweat in the garden and a Red Admiral, Hackberry Emperor, or other species alights on your bare arm, hold still and watch closely. You may see and feel the butterfly begin to tap its proboscis against your skin with a delicate, tickling touch as it sips your sweat.

#### **Puddle Butterflies**

- Most swallowtails
- Most whites and sulphurs
- Most blues
- A few of the true brushfoots, including the Question Mark, Eastern Comma, checkerspots, and crescents
- Many admirals
- A few satyrs
- Many skippers

### Patrolling and Perching

For the purpose of mating, male butterflies search out female butterflies in two ways, by *patrolling and perching*. In patrolling, the male butterflies fly over areas where the female butterflies may be feeding or egg-laying. Butterflies do not, however, have sharp vision; so once a patrolling butterfly spots what he perceives to be a likely mate, he swoops down and examines it more closely. If it's indeed a female of his species, he will begin the courting ritual.

Some butterflies that commonly use a patrolling strategy include the Monarch, Sulphurs and Whites. When butterflies fly upward next to one another, they are either males combating one another for territory, or males trying to convince females to mate with them.

Instead of patrolling, butterfly species such as the Mourning Cloak (Nymphalidae: *Nymphalis antiopa*), Black Swallowtail (Papilionidae: *Papilio polyxenes*) and Red Admiral (Nymphalidae: *Vanessa atalanta*) will perch on tall plants in areas along streams or ridges where the females are likely to occur. Once they spot something that might be a female, they will fly in to explore it closely. If they have found a female of the appropriate species, they will begin courtship. If the intruder turns out to be a male, the original male will give chase. Generally they will fly vertically for a few feet after which the original male returns to his perch.

### **Mating**

Flight patterns used in courtship differ among the butterfly species. Typically, a male will fly above or behind the female, fluttering his wings a bit more than usual. He may

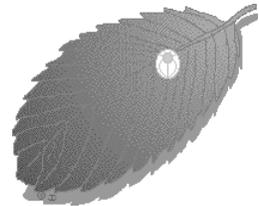
release pheromones from his body or wings. If the female is interested, she'll alight on plants or on the ground. Sometimes courtship continues with the male touching the female's antennae or legs and with different wing movements. They copulate by joining the tips of their abdomens. Sometimes they even take flight during copulation while still joined.

The mated female may try to avoid the advances of other courting males. With many species, the female physically avoids contact either by positioning her abdomen tip or spreading her wings in a manner to make contact impossible, or by releasing antiaphrodisiacs. Still other species, such as Sulphurs, fly upward in a spiral until the male gives up the chase.

### Egg-laying

If you notice a butterfly flying over plants, then touching down briefly, you are watching a female searching for egg-laying sites. Female butterflies recognize host plants through visual cues, such as leaf shape and color. Plant scent further identifies a potential host.

Female butterflies also often drum on the leaf surface with their feet. Drumming scratches the leaf surface, releasing chemicals enabling the butterfly to identify the correct plant on which to lay her eggs.



### Life History of a Few Other Butterflies

- Black Swallowtail (*Papilio polyxenes*) caterpillars feed on dill, parsley and a few related species in the plant family Umbelliferae. Their larvae accumulate toxins from the host in their body and these chemicals can be found in the adult butterfly as well. Caterpillars and adults are strikingly colored as a way to advertise their toxicity and distastefulness to birds.
- Some butterflies have only one generation a year. The pupa overwinters and the butterfly emerges in the spring. Only a few, such as Mourning Cloaks (*Nymphalis antiopa*) overwinter as adults. Mourning Cloaks are the first butterflies seen in the spring, feeding on nectar from shrubs such as *Amelanchier*. Their caterpillars feed on a variety of common trees, such as willows, poplars and elm. They overwinter in barns, tree holes or other protected areas.
- The American Painted Lady (*Vanessa virginiensis*) and the Painted Lady (*Vanessa cardui*) overwinter in the south. Painted ladies are attracted to open areas with low vegetation and a variety of flowers. The larvae feed on everlastings (*Anaphalis* spp. ) as well as thistles. The adults prefer pussytoes (*Antennaria* spp.) and other composites, such as black-eyed Susan and sunflowers.
- The monarch butterfly (*Danaus plexippus*) is sometimes called the "milkweed butterfly" because its larvae eat the milkweed plant (*Asclepias* spp). In fact, milkweed is the only thing the larvae can eat! If you'd like to attract monarchs to your garden, you can try planting milkweed. In the winter the monarchs east of the Rocky Mountain migrate to 14 known overwintering sites in Mexico.

## Butterfly Gardens Attract More Than Just Butterflies

By Karen Garland, Cherokee County Master Gardener

Selecting a variety of suitable plants can create habitat for numerous wildlife species. Food can take on many different forms depending on what kind of wildlife is being targeted. Whether your garden is in the city or country, large or small, one of the most simple and inexpensive gardens that you can plant to attract wildlife is a butterfly garden, which includes a variety of flowering and fruiting shrubs.

In addition to attracting butterflies and being able to follow the entire lifecycle from egg to adult butterfly these gardens also frequently attract birds that either feed on the various stages of butterflies or on fruits and berries produced by the butterfly plants. Also, don't forget the food chain. Soon other species of birds, mammals, amphibians, and reptiles will be enjoying the habitat as well.

Plant Species	Butterflies Attracted	Other Wildlife Species Attracted
<b>Spicebush (<i>Lindera benzoin</i>)</b>	Host plant for spicebush swallowtail and the giant prometheus silk moth. Nectar plant for a variety of butterflies.	The bright red berries are favored by thrushes, bluebirds, catbirds, Eastern kingbirds, mockingbirds, great-crowned flycatchers, phoebes, brown thrashers, vireos and others
<b>Black Cherry Tree (<i>Prunus serotina</i>)</b>	Host plant for Eastern tiger swallowtail, viceroy, columbia silk moth, coral hairstreak, red spotted purple, painted lady, and Eastern tent caterpillar	The fruit is eaten by many mammals, including rabbits, foxes, opossums, and squirrels. Birds include, robins, brown thrashers, northern mockingbirds, Eastern bluebirds, catbirds, cardinals, woodpeckers, sparrows and others
<b>Tulip Tree (<i>Liriodendron tulipifera</i>)</b>	Host plant for Eastern tiger swallowtail and a nectar source for a variety of butterflies	The leaves and stems are eaten by white-tailed deer and small mammals. The samaras are eaten by northern bobwhites, purple finches, cardinals, rabbits, squirrels, and mice. Hummingbirds consume the flower nectar.

<b>Dogwood Tree (<i>Cornus florida</i>)</b>	Host plant for the spring azure butterfly	The berries are eaten by more than 36 species of birds, including catbirds, mockingbirds, thrushes, and robins. Many warblers and other birds will hunt for insects among the furrows in the bark. Various mammals, including chipmunks, rabbits, and deer browse on the twigs, leaves, and bark.
<b>Bird-foot Violets (<i>Viola pedata</i>)</b>	Host plant for great spangled fritillary	Seeds are eaten by birds, including mourning doves, northern bobwhites, wild turkeys, and dark-eyed juncos. Mice and rabbits also eat the seeds, leaves, and stems.
<b>Asters (<i>Aster spp.</i>)</b>	Nectar plant for a variety of butterfly species	Seeds are eaten by cardinals, finches, sparrows, chickadees, nuthatches, towhees, and indigo buntings.
<b>Black-eyed Susan (<i>Rudbeckia spp.</i>)</b>	Nectar plant for a variety of butterfly species	Seeds are eaten by finches, chickadees, cardinals, sparrows, nuthatches, and towhees.
<b>Goldenrods (<i>Solidago spp.</i>)</b>	Nectar plant for a variety of butterfly species	Seeds are eaten by finches and various species of songbirds
<b>Thistle(<i>Cirsium spp.</i>)</b>	Host plant for painted lady butterflies	Seeds are eaten by finches, chickadees, and indigo buntings.
<b>American Holly (<i>Ilex opaca</i>)</b>	Host plant for Henry's elfin	Berries are enjoyed by a

	butterfly	variety of birds and mammals
<b>Pawpaw (<i>Asimina triloba</i>)</b>	Host plant for zebra swallowtails	Fruit enjoyed by opossums, squirrels, red and gray foxes, and raccoons. Birds include scarlet tanagers, bluejays, great crested flycatcher, and crows.
<b>Eastern Redcedar (<i>Juniperus virginiana</i>)</b>	Host plant for juniper hairstreak butterflies	The cedar waxwing is one of the principal users of the berries, but numerous other birds and mammals enjoy them too.
<b>Coreopsis (<i>Coreopsis spp.</i>)</b>	Nectar plant for a variety of butterfly species	Seeds are eaten by goldfinches and songbirds
<b>Purple Coneflower (<i>Echinacea spp.</i>)</b>	Nectar plant for a variety of butterfly species	Seeds are eaten by goldfinches and other seed-eating birds.
<b>Sunflowers (<i>Helianthus spp.</i>)</b>	Nectar plant for a variety of butterfly species	Seeds are consumed by Northern bobwhites, mourning doves, sparrows, finches, chickadee, and dark eyed juncos. Various mammals also enjoy the seeds.
<b>Hyssop (<i>Agastache spp.</i>)</b>	Nectar plant for a variety of butterfly species	Nectar plant for hummingbirds and seeds are enjoyed by goldfinches.

## Butterfly Gardening Tips

- 1. Make sure you have a full succession of nectar blooms through the seasons that are planted in masses in full sun areas.
- 2. Provide water. Fill a shallow container with sand. Place a few rocks and twigs on the sand to provide landing sites within reach of the water. Then fill the container with water to the level of the sand. Such puddles are those sought by butterflies, not birdbaths, ponds, or large water features.
- 3. Provide a variety of shrubs, trees, and brushpiles for shelter and windbreaks..
- 4. Place perches for sunning in, or near, the garden where butterflies can land and spread their wings. These include flat stones, wooden fence posts, and areas of mulch.
- 5. Eliminate insecticides in your butterfly garden. At some stage of their life cycles, all butterflies are susceptible to chemicals.
- 6. Don't deadhead flowers late in the season. Leave these on and the plants will do double duty-- first in the season for the butterflies then later in winter as a source of seeds for the birds.
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## **Resources**

Monarchs Across Georgia  
[www.monarchsacrossga.org](http://www.monarchsacrossga.org)

The University of Kansas Entomology Program  
[www.monarchwatch.org](http://www.monarchwatch.org)

Track Monarch Butterfly Migration  
[www.learner.org/jnorth](http://www.learner.org/jnorth)

Monarchs in the Classroom  
[www.monarchlab.umn.edu](http://www.monarchlab.umn.edu)

Butterfly Conservation  
[www.xerces.org](http://www.xerces.org)

The Butterfly Website  
<http://butterflywebsite.com/>

Butterflies of North America  
<http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/bflyusa.htm>

North American Butterfly Association  
<http://www.naba.org/>

## **Field Guides and Gardening Books**

**Butterflies Through Binoculars: The East**  
By Jeffrey Glassberg

**Butterflies Of Georgia Field Guide**  
by Jaret C. Daniels

**Butterfly Gardening for the South**  
By Geyata Ajilvsgi

**Butterfly Gardening: Creating Summer Magic in Your Garden**  
By The Xerces Society and The Smithsonian Institution

**Ortho's All about Attracting Hummingbirds and Butterflies**  
By Ortho Books

**The Family Butterfly Book**  
By Rick Mikula

**Handbook for Butterfly Watchers**  
By Robert Michael Pyle.

**Stokes Butterfly Book : The Complete Guide to Butterfly Gardening, Identification, and Behavior**  
By Ernest Williams and Donald Stokes

To attract hummingbirds to your garden, a variety of nectar-rich flowers are essential. Although it has been said that hummingbirds prefer red, tube shaped flowers, hummingbirds will enjoy the nectar of many colors and shapes of flowers. In designing a garden favorable to hummingbirds, consider clusters of shrubs so the hummingbird can approach flowers from all sides. Another consideration is to have a variety of plant heights. Different heights will allow protection from weather as well as strategic perching points for the hummingbirds. A variety of sunlight is appreciated by hummingbirds, therefore, more than one garden area may be necessary - perhaps one area in the sun and another area in the shade. Favorite Hummingbird Flowers Include:



- Bee Balm (*Monarda spp.*)
- Butterfly bush (*Buddleia spp.*)
- Cardinal flower (*Lobelia cardinalis*)
- Columbine (*Aquilegia coerulea*):
- Coral bells (*Heuchera spp.*)
- Daylily
- Foxglove (*Digitalis spp.*)
- Geranium (*Geranium spp.*)
- Gladiolus (*Gladiolus spp.*)
- Hibiscus (*Hibiscus spp.*)
- Hollyhock (*Alcea spp.*)
- Lupine (*Lupinus spp.*)
- Morning glory
- Phlox (*Phlox spp.*)
- Salvia (*Salvia spp.*)
- Scabiosa (*Scabiosa spp.*)
- Trumpet vine (*Campsis radicans*)
- Verbena (*Verbena spp.*)

**Recipe for homemade nectar:**

4 parts water to 1 part granulated sugar.

In a pan, combine 4 cups of water to 1 cup of sugar. Bring to a boil, stirring frequently to dissolve sugar granules. Let cool and then transfer to a clean glass jar. No need to add red food coloring. Store in the refrigerator for up to one week (will start to get "gunky" after a week). Pour cold homemade nectar into hummingbird feeder. Hang the feeder outside and watch the hummers find it.

TIP: I like to hang my feeders in an area that gets more shade than sun. This will keep the nectar fresher longer. Change the nectar every few days - hummers don't like stagnant nectar. Remember to wash the feeder well between refills.

- Using pesticides around hummingbird plants is a very bad idea. Killing garden pests will also eliminate the small insects hummingbirds rely upon for protein. In addition, hummers might directly ingest pesticides sprayed onto flowers, which could sicken or kill the birds.
- Water is very important to a hummingbird garden. Hummingbirds need water to drink and to bathe. Try putting in a water mister. The hummingbirds really like taking a shower in a mister and watching them can be quite entertaining.
- A great thing about a hummingbird garden is the minimal maintenance. Hummingbirds love to eat small bugs like gnats, aphids, and spiders. The hummingbirds will even eat all of the bugs out of the spider web, eat the spider, and then steal the web to help build a nest. Pesticides are not needed in a hummingbird garden. The Hummingbirds themselves are great little exterminators.