

Urban Wildlife

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# Butterflies In Your Backyard

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Colorful butterflies, like this great spangled fritillary, have made butterfly watching a popular pastime. Photo courtesy of Thomas G. Barnes, University of Kentucky

**B**utterfly watching, though unlikely to match the widespread popularity of bird watching, has gained significant favor in recent years. Butterflies are colorful, diverse, abundant, and active during the day in warm months, making them an ideal pursuit for wildlife watchers. In fact, wildlife watching as a whole, given impetus by the increased awareness of regional and ecological diversity, has become one of this country's fastest-growing outdoor recreational activities.

Butterflies and caterpillars (the larval stage in the butterfly life cycle) provide food for birds and other organisms, pollinate flowers, and are easy to attract to a garden or backyard landscape. Butterflies are found throughout North Carolina and will flourish within a well-designed landscape of native plants in both rural and urban areas. Planting a variety of both nectar plants for adults and host plants for caterpillars in a sunny location will ensure many hours of viewing pleasure as butterflies visit your garden.

#### Common butterflies of North Carolina

North Carolina's diverse natural landscape includes coastal dunes, pocosins, sandhill savannahs, piedmont forests, wetlands, and mountain ranges. These habitats

provide a home for more than 160 butterfly species. Some species are found statewide, while others are restricted to a specific habitat or region. Scientists classify species into a series of genera and families, based upon similar genetics or similar physical characteristics. Here is a sampling of the butterflies you are likely to encounter in North Carolina:

#### **Family Papilionidae (swallowtails)**

- Pipevine Swallowtail (*Battus philenor*)
- Zebra Swallowtail (*Eurytides marcellus*)
- Black Swallowtail (*Papilio polyxenes*)
- Eastern Tiger Swallowtail (*Papilio glaucus*)
- Spicebush Swallowtail (*Papilio troilus*)

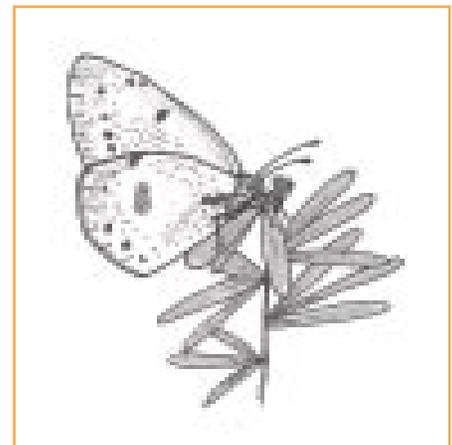


Spicebush swallowtail.  
Illustration by Liessa Thomas Bowen

#### **Palamedes Swallowtail (*Papilio palamedes*)**

#### **Family Pieridae (sulphurs, whites, and yellows)**

- Cabbage White (*Pieris rapae*)
- Clouded Sulphur (*Colias philodice*)
- Orange Sulphur (*Colias eurytheme*)
- Cloudless Sulphur (*Phoebis sennae*)
- Sleepy Orange (*Eurema nicippe*)

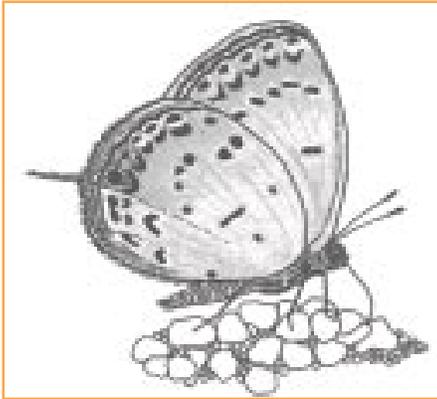


Orange sulphur.  
Illustration by Liessa Thomas Bowen

#### **Family Lycaenidae (gossamer-wings)**

- Gray Hairstreak (*Strymon melinus*)
- Red-Banded Hairstreak (*Calycopis cecrops*)

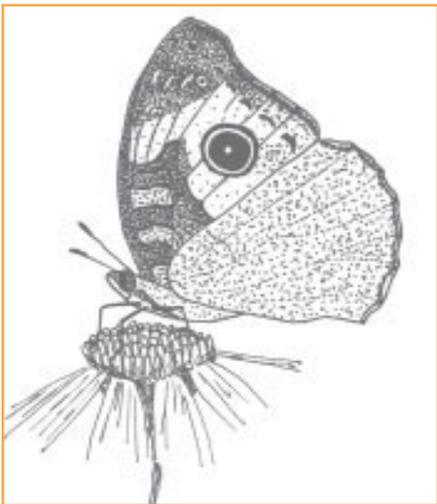
Eastern Tailed-Blue  
*(Everes comyntas)*  
 Spring Azure *(Celastrina ladon)*



Eastern tailed-blue.  
 Illustration by Liessa Thomas Bowen

**Family Nymphalidae**  
**(brushfoot butterflies)**

American Snout  
*(Libytheana carinenta)*  
 Variegated Fritillary  
*(Euptoieta claudia)*  
 Great Spangled Fritillary  
*(Speyeria cybele)*  
 Pearl Crescent *(Phyciodes tharos)*  
 Question Mark  
*(Polygonia interrogationis)*  
 Eastern Comma *(Polygonia comma)*  
 Mourning Cloak  
*(Nymphalis antiopa)*



Common buckeye.  
 Illustration by Liessa Thomas Bowen

American Lady *(Vanessa virginiensis)*  
 Red Admiral *(Vanessa atalanta)*  
 Common Buckeye *(Junonia coenia)*  
 Red-Spotted Purple  
*(Limenitis arthemis astyanax)*  
 Viceroy *(Limenitis archippus)*  
 Monarch *(Danaus plexippus)*

**Family Hesperiiidae (skippers)**

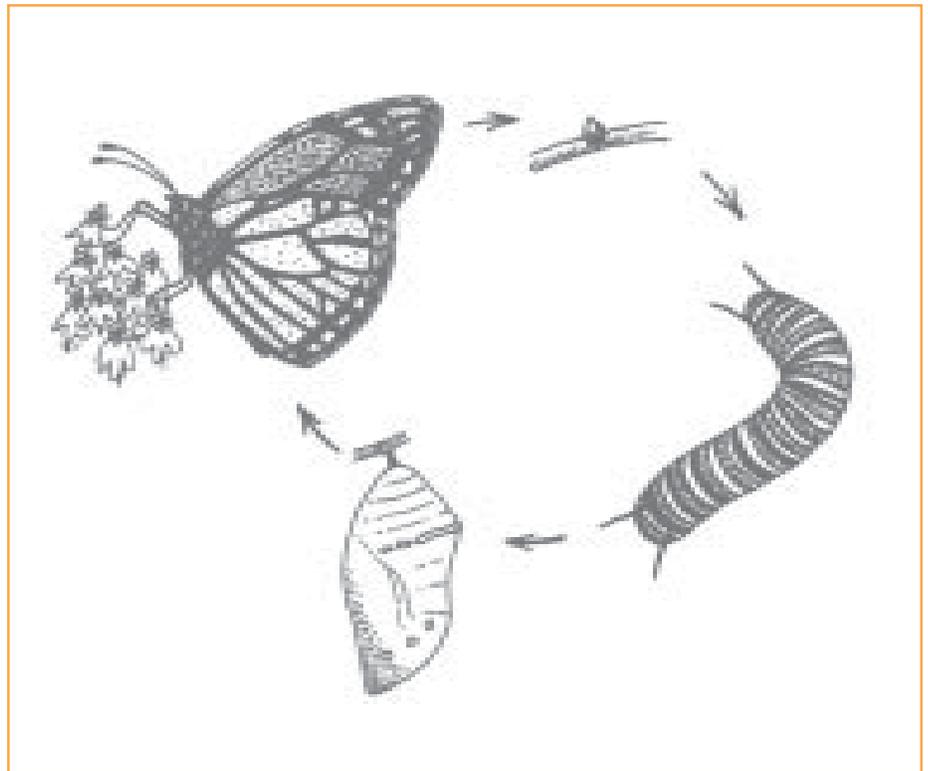
Silver-Spotted Skipper  
*(Epargyreus clarus)*  
 Long-Tailed Skipper  
*(Urbanus proteus)*  
 Southern Cloudywing  
*(Thorybes bathyllus)*  
 Juvenal's Duskywing  
*(Erynnis juvenalis)*  
 Horace's Duskywing  
*(Erynnis horatius)*  
 Least Skipper *(Ancyloxypha numitor)*  
 Fiery Skipper *(Hylephila phyleus)*  
 Sachem *(Atalopedes campestris)*  
 Clouded Skipper *(Lerema accius)*



Least skipper.  
 Illustration by Liessa Thomas Bowen

**Life cycle**

Butterflies and moths are unique because they change from a caterpillar to a winged adult through a process called metamorphosis. A typical butterfly's life begins as an egg, generally laid on the leaf of a host plant. A *host plant* is a plant that caterpillars like



A monarch butterfly changes from an egg (top right) to a caterpillar to a pupa to a winged adult during a process called metamorphosis.

Illustration by Liessa Thomas Bowen

to eat. Eggs soon hatch into caterpillars, which act as eating machines to devour leaves of the host plant. Caterpillars often have very specific food requirements that restrict them to a particular plant. After a few weeks, the caterpillar molts into a mummy-like stage with a hard protective casing, called a pupa or chrysalis. While in the chrysalis, the caterpillar is transformed into an adult. At the end of about 2 weeks, the adult emerges from the chrysalis, spreads and dries its wings, and



A monarch caterpillar (left) feeds on the foliage of its host plant, milkweed, before changing into an adult (right). Left photo courtesy of Thomas G. Barnes, University of Kentucky; right photo by Chris Moorman

begins searching for food and a mate. Following successful mating, the female begins her search for a host plant on which to deposit her eggs, and the life cycle begins again.

### Physiology and behavior

- Butterflies and moths are insects in the order Lepidoptera, meaning “scaly-winged.” A person who studies these creatures is called a “lepidopterist.”
- Moths may have whip-like, fern-like, or fuzzy antennae with no knobs at their ends. Butterfly antennae are smooth, thin, and whip-like with a terminal knob.
- Butterfly wings are covered with thousands of tiny overlapping scales arranged like shingles on a

roof. A butterfly can fly even if these scales are removed.

- Colors such as blue, green, violet, gold, and silver on butterfly wings are not caused by pigment, but rather by light reflecting off the wing scales.
- Depending upon the species, adult butterflies can live from 1 week to 9 months.
- Butterflies (and other insects) have an exoskeleton, or structural support on the outside of their bodies, to protect them and keep in fluids so they don’t dry out.



- Butterflies and caterpillars breathe through “spiracles,” which are tiny openings along the sides of their bodies.
- Butterflies can smell with their antennae.
- Butterflies have compound eyes that allow them to see the colors red, green, and yellow. Their eyes do not rotate to follow a predator’s movement; rather, they detect movement as the object moves from one facet of the eye to the next.
- Butterflies use special nerve cells called chemoreceptors on the pads of their feet to “taste” food and identify leaves of their caterpillar’s host plant before they lay their eggs.
- In some butterfly species, females and males look different.



The great purple hairstreak, like other butterflies, has a preferred host plant, mistletoe. Photo by Chris Moorman

Their colors may vary slightly, and females generally are larger than males. But size cannot be used to distinguish between the sexes because individuals of any single species may vary in how big they are, depending on the amount and quality of food they ate as caterpillars.

- Most butterflies lay their eggs on a specific type of plant, called their host plant, which their caterpillars later feed on. Exceptions include Harvester caterpillars, which eat woolly aphids, and a few other caterpillars that eat rotting leaves rather than living plant foliage.
- Adult butterflies may feed on nectar from flowers, but some prefer rotten fruit or tree sap. They suck the liquid food through a straw-like “tongue”



Male eastern tiger swallowtails congregate at “puddling” areas. Photo courtesy of Thomas G. Barnes, University of Kentucky

called a proboscis, which curls up under the head like a watchspring when not in use.

- Male butterflies often congregate at “puddling” areas, which include mud puddles, moist soil along stream banks, and animal feces. There they ingest salts important in sperm production.
- Different species of butterflies have characteristic behaviors. For example, some perch on leaves, guarding an area and chasing away intruders. Others appear to constantly patrol certain areas and rarely perch.
- Butterflies bask in the sun to warm their bodies before they fly. Their wings act as solar collectors.
- Butterflies are most active during the warmest parts of the day, but in temperatures of over 100° F, they may become overheated and seek shade.



Like this zebra swallowtail, many butterflies often bask in the early morning sunlight. Photo courtesy of Thomas G. Barnes, University of Kentucky

- Most species of butterflies survive the winter by hibernating as caterpillars, pupae, or adults. A few spend the winter as eggs. Fewer still migrate to warmer climates.
- Those species that spend the winter as adults tuck themselves behind loose bark or in tree

cavities. They emerge in search of sap or rotten fruit on warm, sunny days.

- Eggs, caterpillars, and adult butterflies have many predators. To avoid them, females lay eggs in concealed locations on the host plant, and caterpillars often look inconspicuous. To scare away predators, some caterpillars have large eye-spots that resemble a snake’s head. Other caterpillars have protective spines, release obnoxious scents, or just plain taste bad.



Passionflower and many other native plants provide an ideal habitat for butterflies in your backyard.

Photo courtesy of Thomas G. Barnes, University of Kentucky

### Using native plants to attract butterflies

Native plants generally are defined as those that occurred in North America before European settlement. *Exotic* plants are those that are not native. Plants native to your area grow well because they are specifically adapted to the climate, soils, temperature, and precipitation. Native plants are those to which regional butterflies have adapted, and therefore, they are ideal for butterfly gardening and for larger restoration projects.

### Why focus on native plants for butterfly habitat?

- These plants require relatively little maintenance, watering, or care because they are adapted to a particular area.
- Native plants will attract butterflies native to the region. Caterpillars are very picky eaters and will eat only very specific host plants; native plants provide these specific food sources.
- Some exotic plants grow with excessive vigor and compete for space with native plants. Because some exotics could “escape” from your garden and threaten nearby wild habitat, they should be specifically avoided (see *Landscaping for Wildlife with Native Plants*, AG-636-03).
- Most ornamental plants are bred for color and bloom size, not for nectar production. While these



A cluster of orange coneflower plants with taller purple coneflowers growing in the background allows butterflies easy access to abundant nectar without excessive exposure to predators.

Photo by Chris Moorman

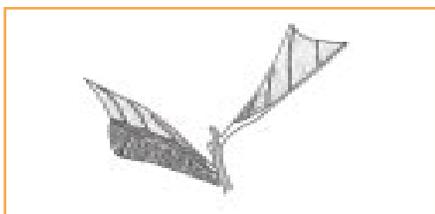
cultivars may be attractive to us, many provide little benefit to wildlife.

## Creating a butterfly habitat

### Diversity

An effective butterfly habitat provides everything a butterfly needs to complete its life cycle.

- Provide a good diversity of host plants to attract a variety of butterflies and their caterpillars (see Table 1). Caterpillars are voracious but picky eaters, and many feed only on a particular species of plant.
- Choose a variety of nectar plants that will provide food throughout the growing seasons, as different species of butterfly are active from early spring through late fall (see Table 2).
- Choose flowers with blooms of different sizes and depths. Smaller butterflies, such as hairstreaks and skippers, have shorter proboscises and are unable to reach the nectar in larger blooms. Larger butterflies, such as swallowtails, favor larger blooms.
- Consider the moisture and light requirements of plants before introducing them to your butterfly habitat. Choose only the plants most appropriate for your area.



Zebra swallowtail caterpillars feed almost exclusively on pawpaw plants. Illustration by Liessa Thomas Bowen

Table 1. Some native host plants for North Carolina butterflies.

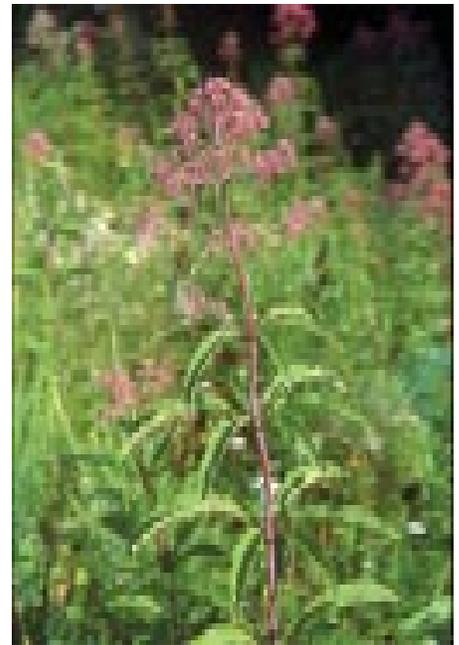
Scientific Name	Common Name	Butterfly Larvae
<b>Trees</b>		
<i>Betula alleghaniensis</i>	Yellow Birch	Mourning Cloak, Dreamy Duskywing
<i>Betula lenta</i>	Sweet Birch	
<i>Betula nigra</i>	River Birch	
<i>Carya glabra</i>	Pignut Hickory	Banded Hairstreak
<i>Carya tomentosa</i>	Mockernut Hickory	
<i>Celtis laevigata*</i>	Hackberry	American Snout, Mourning Cloak, Question Mark, Hackberry Emperor, Tawny Emperor
<i>Celtis tenuifolia</i>	Sugarberry	
<i>Chamaecyparis thyoides</i>	Atlantic White Cedar	Hessel's Hairstreak
<i>Fraxinus americana</i>	White Ash	Eastern Tiger Swallowtail
<i>Ilex opaca</i>	American Holly	Henry's Elfin
<i>Juniperus virginiana</i>	Eastern Redcedar	Juniper Hairstreak
<i>Liriodendron tulipifera*</i>	Yellow Poplar	Eastern Tiger Swallowtail
<i>Persea borbonia</i>	Redbay	Palamedes Swallowtail
<i>Pinus echinata</i>	Shortleaf Pine	Eastern Pine Elfin
<i>Pinus taeda</i>	Loblolly Pine	
<i>Populus deltoides</i>	Cottonwood	Viceroy, Red-Spotted Purple
<i>Prunus americana</i>	Wild Plum	Coral Hairstreak, Eastern Tiger Swallowtail, Red-Spotted Purple, Spring Azure, Viceroy
<i>Prunus angustifolia</i>	Chickasaw Plum	
<i>Prunus serotina*</i>	Black Cherry	
<i>Quercus</i> spp.	Oaks	Banded Hairstreak, Edward's Hairstreak, Gray Hairstreak, White-M Hairstreak, Horace's Duskywing, Juvenal's Duskywing
<i>Robinia pseudoacacia*</i>	Black Locust	Clouded Sulphur**, Zarucco Duskywing, Silver-Spotted Skipper
<i>Salix caroliniana</i>	Carolina Willow	Eastern Tiger Swallowtail, Mourning Cloak, Eastern Comma**, Red-Spotted Purple, Viceroy
<i>Salix nigra*</i>	Black Willow	
<i>Sassafras albidum*</i>	Sassafras	Spicebush Swallowtail
<i>Ulmus alata</i>	Winged Elm	Painted Lady**, Eastern Comma, Mourning Cloak, Question Mark, Red-Spotted Purple**
<i>Ulmus americana*</i>	American Elm	
<b>Small Trees</b>		
<i>Alnus serrulata</i>	Alder	Harvester ( <i>carnivorous larvae eat woolly aphids commonly found on alder</i> )
<i>Amelanchier arborea</i>	Serviceberry	Red-Spotted Purple, Viceroy**
<i>Asimina triloba</i>	Pawpaw	Zebra Swallowtail
<i>Carpinus caroliniana</i>	Ironwood	Eastern Tiger Swallowtail, Red-Spotted Purple
<i>Cercis canadensis</i>	Redbud	Henry's Elfin
<i>Cornus florida</i>	Flowering Dogwood	Spring Azure
<i>Crataegus</i> spp.	Hawthorn	Gray Hairstreak, Red-Spotted Purple**, Viceroy**
<i>Myrica cerifera</i>	Wax Myrtle	Red-Banded Hairstreak
<i>Rhus copallina</i>	Winged Sumac	Red-Banded Hairstreak
<i>Rhus glabra</i>	Smooth Sumac	
<i>Symplocos tinctoria</i>	Sweetleaf	King's Hairstreak
<b>Shrubs</b>		
<i>Asimina parviflora</i>	Dwarf Pawpaw	Zebra Swallowtail
<i>Ceanothus americanus</i>	New Jersey Tea	Mottled Duskywing
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	Henry's Elfin
<i>Gaylussacia frondosa</i>	Blue Huckleberry	
<i>Ilex glabra</i>	Inkberry	Henry's Elfin
<i>Lindera benzoin</i>	Spicebush	Palamedes Swallowtail, Spicebush Swallowtail
<i>Phoradendron serotinum</i>	Mistletoe	Great Purple Hairstreak
<i>Vaccinium arboreum</i>	Sparkleberry	Brown Elfin
<i>Vaccinium corymbosum</i>	Highbush Blueberry	
<i>Vaccinium stamineum</i>	Deerberry	

**Table 1. Some native host plants for North Carolina butterflies (continued).**

Scientific Name	Common Name	Butterfly Larvae
<b>Vines</b>		
<i>Aristolochia macrophylla</i>	Dutchman's Pipe	Pipevine Swallowtail
<i>Passiflora incarnata</i>	Passionflower	Gulf Fritillary, Variegated Fritillary, Zebra Swallowtail
<b>Herbs and Wildflowers</b>		
<i>Agalinus</i> spp.	Gerardia	Common Buckeye
<i>Antennaria plantaginifolia</i>	Plantain-Leaved Pussytoes	American Lady
<i>Antennaria solitaria</i>	Solitary Pussytoes	
<i>Aristolochia serpentaria</i>	Virginia Snakeroot	Pipevine Swallowtail
<i>Aruncus dioicus</i>	Goat's Beard	Dusky Azure
<i>Asclepias incarnata</i>	Swamp Milkweed	Monarch
<i>Asclepias tuberosa</i>	Butterfly Weed	
<i>Asclepias variegata</i>	White Milkweed	
<i>Aster carolinianus</i>	Climbing Aster	Pearl Crescent
<i>Aster novae-angliae</i>	New England Aster	
<i>Baptisia tinctoria</i>	Wild Indigo	Wild Indigo Duskywing
<i>Boehmeria cylindrica</i>	False Nettle	Eastern Comma, Question Mark, Red Admiral
<i>Chamaecrista fasciculata</i>	Partridge Pea	Cloudless Sulphur, Little Yellow, Sleepy Orange
<i>Chelone glabra</i>	White Turtlehead	Baltimore Checkerspot, Common Buckeye**
<i>Cimicifuga racemosa</i>	Black Cohosh	Appalachian Azure
<i>Cirsium horridulum</i>	Yellow Thistle	Little Metalmark, Painted Lady
<i>Desmodium</i> spp.	Beggarlice	Silver-Spotted Skipper, Hoary Edge, Northern Cloudywing, Southern Cloudywing, Gray Hairstreak, Eastern Tailed-Blue
<i>Eupatorium fistulosum</i>	Joe-Pye-Weed	Pearl Crescent
<i>Gnaphalium obtusifolium</i>	Rabbit Tobacco	American Lady
<i>Helianthus atrorubens</i>	Sunflower	Silvery Checkerspot
<i>Laportea canadensis</i>	Wood Nettle	Eastern Comma, Red Admiral
<i>Lespedeza capitata</i>	Bush Clover	Eastern Tailed-Blue
<i>Lespedeza virginica</i>	Virginia Bush Clover	
<i>Linaria canadensis</i>	Blue Toadflax	Common Buckeye
<i>Penstemon laevigatus</i>	Smooth Beardtongue	Common Buckeye
<i>Ruellia caroliniensis</i>	Wild Petunia	Common Buckeye
<i>Tephrosia virginiana</i>	Goat's Rue	Southern Cloudywing, Northern Cloudywing
<i>Thaspium barbinode</i>	Meadow Parsnip	Black Swallowtail
<i>Thaspium trifoliatum</i>	Hairy-Jointed Meadow Parsnip	
<i>Trifolium carolinianum</i>	Carolina Clover	Clouded Sulphur, Eastern Tailed-Blue, Orange Sulphur, Gray Hairstreak, Northern Cloudywing
<i>Trifolium reflexum</i>	Buffalo Clover	
<i>Urtica chamaedryoides</i>	Heartleaf Nettle	Painted Lady**, Eastern Comma, Question Mark, Red Admiral
<i>Urtica dioica</i>	Stinging Nettle	
<i>Viola</i> spp.	Violets	Fritillaries
<i>Zizia aptera</i>	Heart-Leaved Alexanders	Black Swallowtail
<i>Zizia trifoliata</i>	Golden Alexanders	
<b>Grasses and Sedges</b>		
<i>Andropogon</i> spp.	Bluestem, Broomsedge	Common Wood-Nymph, Various Skippers
<i>Erianthus</i> spp.	Plumegrass	
<i>Panicum</i> spp.	Panic Grasses	
<i>Schizachyrium scoparius</i>	Little Bluestem	
<i>Tridens flavus</i>	Purple Top	
<i>Arundinaria gigantea</i>	Switchcane	Southern Pearly-Eye, Creole Pearly-Eye, Various Skippers
<i>Carex</i> spp.	Sedges	Various Satyrs
<i>Uniola latifolia</i>	River Oats	Northern Pearly-Eye

\* Trees that can be pruned and kept at shrub size by cutting them to the ground every 2-3 years. In this way, people with small yards can increase tree species diversity.

\*\* Rarely uses this host plant in North Carolina.



Taller plants like joe-pye-weed can be great nectar sources for butterflies, but they should be placed behind lower-growing plants. Photo by Chris Moorman

- Visit butterfly gardens at local nature centers or botanical gardens and observe which flowering plants attract butterflies.
- Do not get discouraged if a particular plant does not attract butterflies as anticipated. Experiment and find out which plants work in your butterfly habitat.
- Peelings and cores of fruit (peeled, overly ripe bananas work well) can be discarded in partially shaded nooks in the garden where they will attract butterflies that eat rotting fruit.

### Design

Plan your butterfly habitat before buying and putting in any plants. Decide how much space you want to dedicate to your butterfly habitat.

- Map the area in its current condition, then create a map for your projected habitat, making sure to provide for all the basic butterfly needs (sun, shelter, larval host plants, and adult nectar plants).

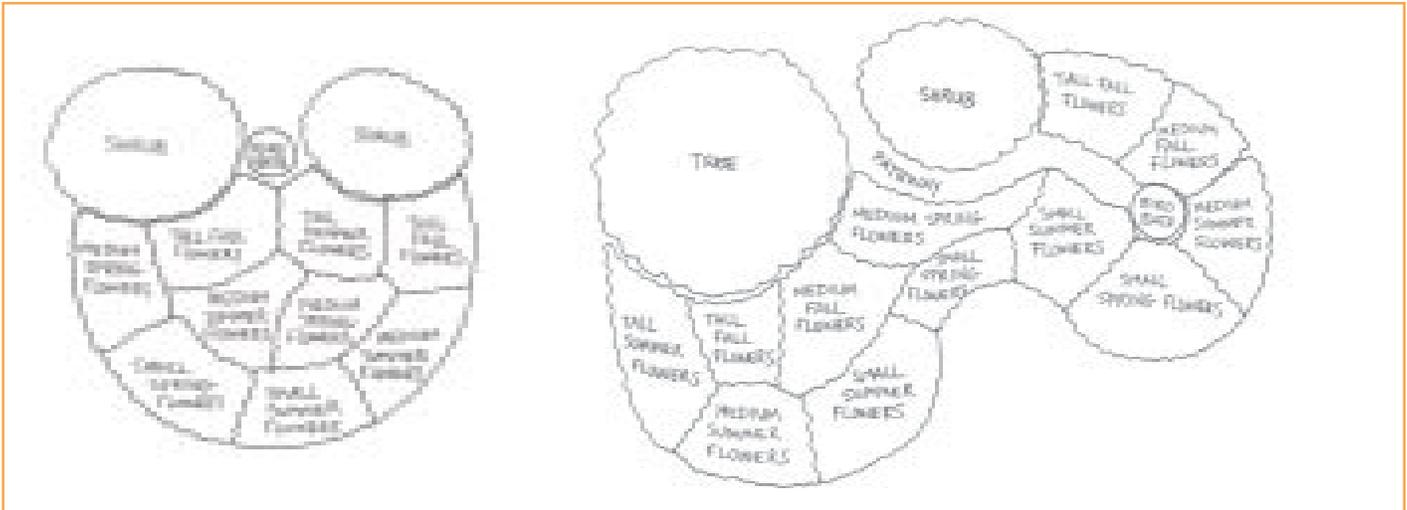
- Your butterfly habitat will function best in a sunny location. Most butterflies are active only in the sun, and many butterfly larval and nectar plants require sunny habitats.
- Place taller plants and shrubs behind smaller plants and ground covers to maximize visibility and enjoyment of your design.
- Concentrate flowering plants with similar blooming periods to allow butterflies easy access to seasonally abundant nectar sources without excessive movement and increased exposure to predators (see Table 2).

- Many nectar and larval host plants grow tall. Taller plants and shrubs provide butterflies with shelter from wind and rain.
- Remember that many of your plants will grow larger and multiply each year as they mature. Be sure to leave room for each plant to grow and expand.
- Do not dig plants from the wild unless you are part of an organized plant rescue. Select nursery-grown native species or cultivate your own from nursery-bred native seeds. By using nursery stock from a reputable dealer, you will help preserve

- your local environment and the native plant population.
- Make “puddling” (ingestion of salts from watery or damp ground) easy for male butterflies by designing water puddles and wet, sandy areas into the habitat and by allowing animal feces to remain in the landscape.
- Provide a few large flat rocks for butterflies to perch on while basking in the sun.
- You can provide shelter for the butterflies in your habitat by leaving snags (standing dead trees) or a brush pile. There is little evidence to suggest that butterflies actually use butterfly houses.

**Table 2. Native nectar plants and their primary blooming period.**

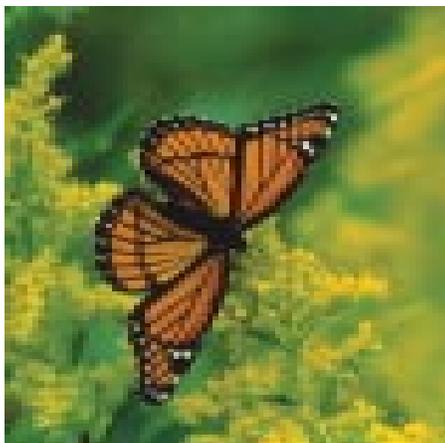
Scientific Name	Common Name	Blooming Dates	Scientific Name	Common Name	Blooming Dates
<i>Aesculus pavia</i>	Red Buckeye	March-April	<i>Hydrangea arborescens</i>	Wild Hydrangea	May-July
<i>Amelanchier arborea</i>	Serviceberry	March-April	<i>Phlox carolina</i>	Carolina Phlox	May-July
<i>Gelsemium sempervirens</i>	Carolina Jessamine	March-April	<i>Rudbeckia hirta</i>	Black-Eyed Susan	May-July
<i>Cornus florida</i>	Flowering Dogwood	March-April	<i>Penstemon canescens</i>	Hairy Beardtongue	May-July
<i>Prunus americana</i>	Wild Plum	March-April	<i>Rhododendron calendulaceum</i>	Flame Azalea	May-July
<i>Prunus angustifolia</i>	Chickasaw Plum	March-April	<i>Apocynum cannabinum</i>	Indian Hemp (Dogbane)	May-July
<i>Vaccinium corymbosum</i>	Highbush Blueberry	March-May	<i>Coreopsis falcata</i>	Sickle Tickseed	May-July
<i>Cercis canadensis</i>	Redbud	March-May	<i>Coreopsis verticillata</i>	Threadleaf Coreopsis	May-July
<i>Aquilegia canadensis</i>	Wild Columbine	March-May	<i>Passiflora incarnata</i>	Passionflower	May-July
<i>Ilex vomitoria</i>	Yaupon	March-May	<i>Asclepias tuberosa</i>	Butterfly Weed	May-Aug.
<i>Halesia tetraptera</i>	Carolina Silverbell	March-May	<i>Heliopsis helianthoides</i>	Ox-Eye	May-Oct.
<i>Symplocos tinctoria</i>	Sweetleaf	March-May	<i>Tilia americana</i>	Basswood	June
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	March-June	<i>Cyrilla racemiflora</i>	Titi	June-July
<i>Rhododendron periclimenoides</i>	Wild Azalea	April-May	<i>Clethra alnifolia</i>	Sweet Pepperbush	June-July
<i>Rhododendron atlanticum</i>	Dwarf Azalea	April-May	<i>Rhus glabra</i>	Smooth Sumac	June-July
<i>Gaylussacia frondosa</i>	Blue Huckleberry	April-May	<i>Oxydendrum arboreum</i>	Sourwood	June-July
<i>Houstonia caerulea</i>	Bluets	April-May	<i>Rhododendron maximum</i>	Rosebay Rhododendron	June-Aug.
<i>Salvia lyrata</i>	Lyreleaf Sage	April-May	<i>Cephalanthus occidentalis</i>	Buttonbush	June-Aug.
<i>Lyonia lucida</i>	Fetterbush	April-May	<i>Echinacea purpurea</i>	Purple Coneflower	June-Aug.
<i>Crataegus</i> spp.	Hawthorn	April-May	<i>Monarda fistulosa</i>	Wild Bergamot	June-Sept.
<i>Ilex decidua</i>	Possumhaw	April-May	<i>Hibiscus moscheutos</i>	Rose Mallow	June-Sept.
<i>Ilex verticillata</i>	Winterberry	April-May	<i>Aralia spinosa</i>	Devil's Walking Stick	June-Sept.
<i>Prunus serotina</i>	Black Cherry	April-May	<i>Impatiens capensis</i>	Jewelweed	June-frost
<i>Prunus pennsylvanica</i>	Fire Cherry	April-May	<i>Phlox paniculata</i>	Summer Phlox	July-Aug.
<i>Rhododendron catawbiense</i>	Catawba Rhododendron	April-June	<i>Pycnanthemum incanum</i>	Hoary Mountainmint	July-Aug.
<i>Ilex opaca</i>	American Holly	April-June	<i>Stokesia laevis</i>	Stoke's Aster	July-Aug.
<i>Kalmia latifolia</i>	Mountain Laurel	April-June	<i>Monarda didyma</i>	Beebalm	July-Sept.
<i>Coreopsis lanceolata</i>	Lance-Leaved Coreopsis	April-June	<i>Liatis spicata</i>	Blazing Star	July-Sept.
<i>Geranium maculatum</i>	Wild Geranium	April-June	<i>Rhus copallina</i>	Winged Sumac	July-Sept.
<i>Rubus</i> spp.	Blackberry, Dewberry	April-June	<i>Asclepias incarnata</i>	Swamp Milkweed	July-Sept.
<i>Liriodendron tulipifera</i>	Yellow Poplar	April-June	<i>Vernonia noveboracensis</i>	Ironweed	July-Sept.
<i>Coreopsis auriculata</i>	Eared Coreopsis	April-June	<i>Lobelia cardinalis</i>	Cardinal Flower	July-Oct.
<i>Vaccinium stamineum</i>	Deerberry	April-June	<i>Eupatorium fistulosum</i>	Joe-Pye-Weed	July-Oct.
<i>Silene virginica</i>	Fire Pink	April-July	<i>Helianthus angustifolius</i>	Swamp Sunflower	July-frost
<i>Vaccinium arboreum</i>	Sparkleberry	May-June	<i>Monarda punctata</i>	Horsemint	Aug.-Sept.
<i>Asclepias variegata</i>	White Milkweed	May-June	<i>Rudbeckia fulgida</i>	Orange Coneflower	Aug.-Oct.
<i>Penstemon laevigatus</i>	Smooth Beardtongue	May-June	<i>Lobelia puberula</i>	Blue Lobelia	Aug.-Oct.
<i>Ilex glabra</i>	Inkberry	May-June	<i>Helianthus atrorubens</i>	Sunflower	Aug.-Oct.
<i>Itea virginica</i>	Virginia Willow	May-June	<i>Solidago</i> spp.	Goldenrod	Aug.-Oct.
<i>Ceanothus americanus</i>	New Jersey Tea	May-June	<i>Ipomoea coccinea</i>	Red Morning Glory	Aug.-frost



Use these designs as ideas for your butterfly landscape. You can attract butterflies from spring through fall by including plants with different blooming periods and caterpillar host plants. For better butterfly viewing, taller plants should be clustered in the back and smaller plants in the front. Illustrations by Liessa Thomas Bowen



Smaller butterflies, like this red-banded hairstreak (left), have short proboscises and are unable to reach the nectar in large blooms. Larger butterflies, like the eastern tiger swallowtail (right), favor larger blooms. Photos by Chris Moorman



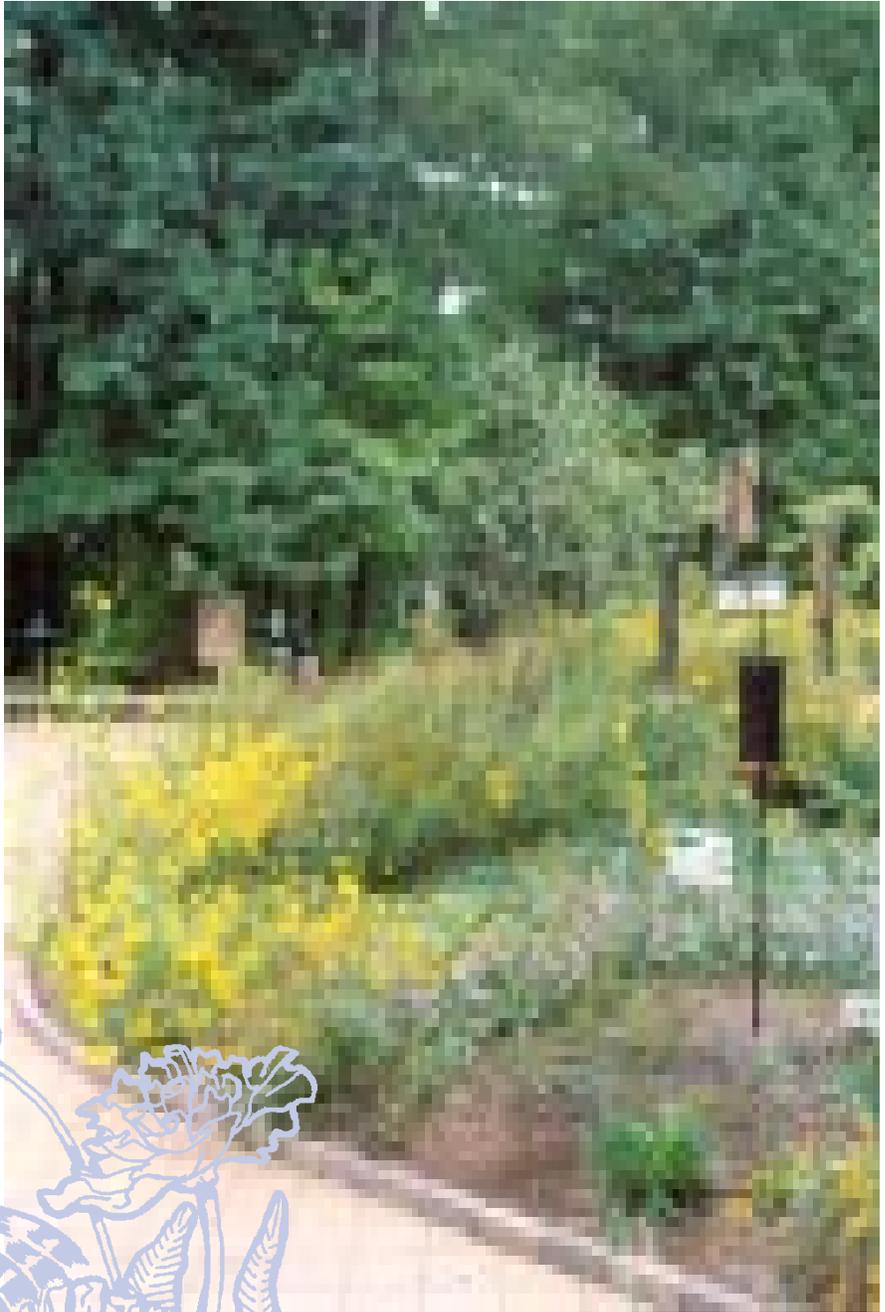
Goldenrod (left), ironweed (right), and other late-flowering plants provide important nectar sources for butterflies like the viceroy (left) and gulf fritillary (right) during a time of the year when many popular ornamentals are not in bloom. Left photo courtesy of Thomas G. Barnes; right photo by Chris Moorman

## Maintenance

- Throughout the growing season, leave the dead flower heads and dead foliage on your plants or you may accidentally remove eggs or pupating butterflies.
- If neatness is in your blood, consider allocating a few plants as butterfly host plants. Leave those plants alone, but remove and relocate caterpillars from individual plants, if you like.
- Wildlife habitat, whether for birds or butterflies, is best left untidy. As native grasses and wildflowers grow, bloom, and set seed, they may grow fast, tall, and a bit scraggly. Nature is not always perfectly ordered, and the most effective butterfly gardens will follow in nature's footsteps.
- To keep your garden looking and performing its best requires research, planning, and annual maintenance. Although you'll probably discover that many butterflies quickly find your new plantings, expect to wait several years before your butterfly garden becomes fully established and, therefore, fully appreciated by the butterflies.

## Butterfly conservation

- Encourage your neighbors and local school officials, businesses, or parks officials to put in butterfly plantings of their own so you all can create a network of butterfly habitats throughout your community.
- Gardening with native plant species can increase critical habitat for both larvae and adult butterflies.
- Minimize the use of pesticides. Chemicals that kill insect pests also kill butterflies and beneficial insects. Pesticides can be toxic to birds, too, and runoff can contaminate streams and water systems.
- Butterfly-releases at weddings or other occasions have become popular, but are not recommended for a number of reasons. These butterflies can spread diseases to the native butterfly population. They may interbreed with the native population,



causing genetic problems or interfering with natural migration patterns. They also generally die quickly because they are released during an inappropriate season or are not equipped to handle the particular environment where they are released.

## Internet resources

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### Notes on the Butterflies of North Carolina

[www.ncsparks.net/butterfly/nbnc.html](http://www.ncsparks.net/butterfly/nbnc.html)

### North American Butterfly Association

[www.naba.org](http://www.naba.org)

### Carolina Butterfly Society

[www.carolinabutterflysociety.org](http://www.carolinabutterflysociety.org)

### Butterflies of North Carolina

[www.rlephoto.com/butterflies/butterflies.html](http://www.rlephoto.com/butterflies/butterflies.html)

### Butterflies of North America

[www.npwrc.usgs.gov/resource/distr/lepid/BFLYUSA/bflyusa.htm](http://www.npwrc.usgs.gov/resource/distr/lepid/BFLYUSA/bflyusa.htm)

### Xerces Society

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

### National Audubon Society

[www.audubon.org](http://www.audubon.org)

### National Wildlife Federation

[www.nwf.org](http://www.nwf.org)

### Northern Prairie Wildlife Resource Center

[www.npwrc.usgs.gov](http://www.npwrc.usgs.gov)

## E-mail forum

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CarolinaLeps is a listserve-style e-mail forum for butterfly enthusiasts to discuss all aspects of butterfly life in the Carolinas, including butterfly finding, butterfly identification, trip reports, butterfly counts, butterfly behavior, backyard butterflying, butterfly gardening, butterfly photography, and butterfly club information. To subscribe, send the message text "subscribe carolinaleps" (without the quotation marks) to [majordomo@duke.edu](mailto:majordomo@duke.edu). Leave the subject line blank, and do not write anything else in your message text. You will receive an automated confirmation, which includes a file of information. For more details, send e-mail to [carolinaleps-owner@duke.edu](mailto:carolinaleps-owner@duke.edu).

## Additional resources

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Ajilvsgi, G. 1990. *Butterfly Gardening for the South*. Dallas, Texas: Taylor Publishing Co.

Barnes, Thomas G. 1999. *Gardening for the Birds*. Lexington: The University Press of Kentucky.

Glassberg, J. 1999. *Butterflies Through Binoculars, The East*. New York: Oxford University Press.

Opler, P. A., and R. T. Peterson. 1992. *Field Guide to Eastern Butterflies (Peterson Field Guides)*. New York: Houghton Mifflin Co.

Pyle, R. M., and S. A. Hughes. 1992. *Handbook for Butterfly Watchers*. New York: Houghton Mifflin Co.

Wasowski, Sally, and Andy Wasowski. 1994. *Gardening with Native Plants of the South*. Dallas, Texas: Taylor Publishing Co.

For more information, request the following Working With Wildlife (WWW) and Urban Wildlife (AG) publications from your local Cooperative Extension Service Center or find them on the Internet at <http://www.ces.ncsu.edu/forestry/>.

- *Songbirds*, WWW-4.
- *Snags and Downed Logs*, WWW-14.
- *Hummingbirds and Butterflies*, WWW-20.
- *Managing Backyards and Other Urban Habitats for Birds*, AG-636-01.
- *Landscaping for Wildlife with Native Plants*, AG-636-03.



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