This book is the cherished work of Galveston County’s Master Gardeners. We invite you to enjoy and celebrate the supreme beauty of our butterflies and the wonderful diversity of plants that nourish them.

If you have any questions or comments, please feel free to call us at 281-334-3413 ext. 1, then 6. Or better yet, visit our lovely demonstration garden. Many butterflies have taken up residence among our lush flowers, shrubs, and plants there — and give us joy every day.

Texas AgriLife Extension Service
Galveston County Office
5115 Highway 3
Dickinson, Texas

The Butterflies of Galveston County
What Every Gardener Needs To Know
The Butterflies of Galveston County

What Every Gardener Needs To Know

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Educational programs conducted by Texas AgriLife Extension Services serve people of all ages regardless of socioeconomic level, race, color, sex, religion, disability or national origin.

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PHOTO CREDIT FOR INSIDE TITLE PAGE
Photo 1: Pipevine Swallowtail on Crape Myrtle TCE/TAMU
Photo 2: Common Buckeye TCE/TAMU
Photo 3: Painted Lady on Daisy USFWS

The End

GCMGA
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Internet Sites

There are a large number of websites devoted to butterflies on the internet.

For this publication, we obtained information about and pictures of the 83 butterflies of Galveston County at the USGS website: www.npwrc.usgs.gov/resource/DISTR/LEPID/BFLYUSA/chklist/states/counties/tx_167.htm

www.google.com (Write in the search engine: Butterflies of Galveston County Texas.)

The page will come up immediately.

The Texas A&M website has some fabulous pictures and good information too: http://aggie-horticulture.tamu.edu/plantanswers/butterfly/

Our very own award-winning Master Gardener website has a section devoted to butterflies and hummingbirds, along with common questions and answers. It is: http://aggie-horticulture.tamu.edu/galveston/butterflies_&_hummingbirds.htm

One can download many beautiful pictures of butterflies free from the National Image Library. It is at: http://images.fws.gov Type in the word “butterfly” or “butterflies” in the Search box and 30 beautiful pictures are available for any use.

Neck, Raymond. A Field Guide to Butterflies of Texas. Texas Monthly Field Guide Series. Gulf Publishing Company, Houston, Texas. 1996. This is a field guide to identifying the hundreds of butterfly species that inhabit or transit through Texas. The book lists the butterflies according to family, with concise description of each butterfly species, its food plants, its life history, its range, and special observations. Only one page is devoted to butterfly gardening.

Ortho. All About Attracting Hummingbirds and Butterflies. Meredith Books, Des Moines, Iowa, 2001. Excellent book. Concise, to-the-point, very practical sections on all aspects of butterfly gardening, including the nature of butterflies, garden design, plants, feeding stations, top ten trees, shrubs, and flowers, and more. Though not specific to the butterflies of our region, this book is very practical, a great way for the gardener to “cut to the chase” and not get bogged down in the subject with too much information.

Scott, James A. The Butterflies of North America: A Natural History and Field Guide. Stanford University Press, Stanford, California, 1986. An encyclopedic, scholarly, scientific book that is goes into all aspects of butterfly history, genetics, ecology, intelligence, behavior, identification, distribution, and variations. Exhaustive discussion of each family, subfamily, species and subspecies of butterfly, including a section of color pictures, and a complete bibliography.


Tveten, John and Gloria. Butterflies of Houston & Southeast Texas. University of Texas Press, Austin, Texas, 1996. Though it has only a short section on butterfly gardening, this is the best book on the butterflies of our immediate area. The book includes terrific color pictures of all our regional butterflies, including many photos of the egg, caterpillar, and pupa stages of these species as well.


**Bibliography**

These are the bibliographical and internet resources used to prepare this specific document. However, there are many other books and websites devoted to the subject of butterflies and their food plants.

**Galveston County Extension Publications:** (free)

*Flutterbyes and Hummers (GC-219)* - quick reference for nurturing butterflies

*From A to Z. Ornamentals and Perennials for Galveston County (GC-113)* - list and descriptions of flowers, including details of planting and cultivation

*Native and Adapted Trees for the Galveston-Houston Area (GC-108)* - list of trees

**Magazines**


**Books**

These books are widely available in area libraries.

Ajilvsgi, Geyata. *Butterfly Gardening for the South: Cultivating Plants that Attract Butterflies.* Taylor Publishing Company, Dallas, Texas. 1990. Stupendous, authoritative, comprehensive book on all aspects of butterfly gardening. Appendices discuss seed and plant sources, organizations, events, magazines, newsletters, and habitat preservation efforts. The color pictures are magnificent, and very helpful in identifying our local butterflies.


Introduction

Butterflies are like a living haiku poem…
their brief, fluttering image captures our souls,
and makes us stop to consider the beauty of the world.

In ancient Greece, the word for the soul – psyche – was also the word for the butterfly. The butterfly was the symbol for the soul as it passed through the shrouded chrysalis stage of apparent death to resurrection as a beautiful and completely transformed winged creature, a joy to everyone who beholds it.

Butterflies and moths are Lepidoptera, an order of insects whose wings are covered with tiny scales. The butterfly’s fragile, scaled-covered wings can vary greatly in size, shape, pattern, and color, and are chiefly a way of attracting mates. Most moths, on the other hand, are night fliers which tend to be dull in color and attract their mates by smell rather than sight. Few birds can catch a butterfly while in flight, and some birds won’t bother since butterflies are mainly lots of wing and not much body. Those butterflies with large eyespot patterns on their wings can even scare off predators when they unfold their wings.

There are over 14,500 species of butterflies in the world and they occur on every continent except Antarctica. Six species of butterflies actually live in Greenland along the edges of glaciers. The tropics of the Western Hemisphere provide habitats for 6,000 species – more than anywhere else in the world. Some butterflies migrate thousands of miles like the famous Monarchs while others stay close to a certain range and habitat. Around 700 species live in the USA, and there are over 100 butterfly species in the Galveston/Houston area. The U.S. Geologic Survey lists 83 of these species in Galveston County proper.

Butterflies and their host plants have evolved together over thousands of years. It is impossible to focus on the insect without also understanding the rich horticultural heritage that has sustained the numerous species of Lepidoptera during that time.

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There are 12 butterfly “ranges” or geographic areas in Texas. Galveston County lies in the “Coastal Margin,” consisting of the whole Gulf Coast of Texas. The butterfly species in our area require the plants of the coastal marshes and meadows, along with our high humidity and relatively constant warm temperatures. Naturally, some butterflies of the heavily wooded “East Texas” range may occur in our area too, though mainly in places like Dickinson that contain large stands of tall trees.
There are probably fewer butterflies in our area than there were 50 years ago because pastures are being given over to residential development, cutting down on the natural vegetation our indigenous butterflies feed on. Many homeowners use pesticides and non-native vegetation in their landscapes, which also impact butterfly populations. Worst of all, fire ants devour millions of butterflies and caterpillars every year.

Nonetheless, it’s easy for Galveston County homeowners to increase local butterfly populations by reducing pesticide use, using bait for fire ant control, and planting some butterfly-friendly plants in their landscapes. Beyond that, butterflies need water and shelter too, which are easily provided in the home landscape. Small backyard butterfly gardens are simple and fun to establish, and can provide butterflies with the plants they need for all stages of their development. Finally, our area is rich in gardens, museums, and resources for those who wish to delight themselves and educate their children on this most wonderful member of our shared natural world: the butterfly.

**PHOTO CREDIT INFORMATION**

The pictures in this book came from three sources.

GCMGA – Galveston County Master Gardener Association

TCE/TAMU – Texas AgriLife Extension Service

USFWS – U.S. Fish and Wildlife Service – National Image Library

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**CHAPTER FIVE**

**Butterfly Educational Resources in our Area**

We have some sensational resources available to Galveston County residents who have an interest in butterflies.

**Cockrell Butterfly Museum of Houston**

The Cockrell Butterfly Center at the Houston Museum of Natural Science is a stunning, living exhibit that showcases hundreds of live butterflies in a naturalistic rainforest setting. Designed to be an interactive experience, butterflies flutter among — and occasionally land on — the visitors. During a typical visit, one can expect to see approximately 50 or so of the world’s largest and most colorful butterfly species. Over 1,500 butterflies live in the Center at various stages of their development. The Butterfly Center also has a large mounted display of butterflies species from all over the world, along with a shop to buy butterfly-related books and items. The museum also offers many special programs on various butterfly topics throughout the year, including travel opportunities to butterfly nature preserves outside our region. It is located at One Hermann Circle Drive, Houston, Texas.  

**Information/Tickets:** (713) 639-4629

**Moody Gardens**

The Moody Garden complex includes many wonderful tourist attractions including three pyramid-museums. The large Rainforest Pyramid represents rain forests of Asia, Africa, and South America. Butterflies abound among waterfalls, cliffs, caverns, Mayan Colonnade, and an ever-changing array of tropical plants. Ask about programs relating to butterflies. It is located at One Hope Boulevard, Galveston, Texas.  

**Information/Tickets:** 800-582-4673

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**Texas City Sundance Garden**

The Texas City Dike area has been developed into a wonderful park featuring diverse sections for playgrounds, wind-surfing, fishing, hiking, and appreciating local wildlife. One section of the Texas City Dike Park is devoted to native plants, and features the Sundance Butterfly Garden. Texas City Dike, Texas City, Texas. **No admission fee**

**Friendswood ISD Nature Center**

The rapidly-developing Friendswood suburb has created the ISD Nature Center featuring plants that attract butterflies and other wildlife. The ISD Nature Center is located on the South side of Westwood Elementary School (506 W. Edgewood), Friendswood, TX. **No admission fee**
Butterflies go through several transformations in their lifetime: from egg to larva/caterpillar to pupa/chrysalis to adult butterfly. After mating, butterflies lay eggs, and the cycle begins again. Gardeners need to recognize the four stages of butterfly development, and realize that the surrounding plants sustain four separate creatures.

It is difficult to generalize about the plant needs of the 83 species of butterfly who inhabit or transit through Galveston County. Some feed broadly, through a wide range of vegetation in their favorite ecosystem – meadow, marsh, forest, or riverside. Others are very picky eaters in both the caterpillar and the adult butterfly stages of life, and require very specific host plants for these stages. For instance, the beautiful iridescent blue/green Pipevine Swallowtail will feed only on plants of the Aristolochia species as a caterpillar — namely, the pipevine family. However, in its adult butterfly state, the Pipevine Swallowtail will gather nectar from several plants including thistles, azaleas, lantana, and others.

Furthermore, the butterflies of our area don’t feed on the same plants in our yard. In their caterpillar stages, the Gulf Fritillary will be found to be feasting on passion vines while the Soapsberry Hairstreak will insist on soapsberry plants, the Giant Swallowtail will be munching the citrus, the Clouded Sulphur will be headed for the peas and clover, and the Black Swallowtail will be devouring the rue, dill, parsley, carrots, and fennel. Other butterflies go for the hackberry, elm, and oak trees in our neighborhoods.

It is important to know that butterflies have many forms and to recognize them, so as not to accidentally destroy them as we work in our yards.

Egg

The female butterfly is always careful to seek a safe place to lay eggs. Usually, this is on the underside of plants on or near the host plant that will feed the young when they hatch into the larva/caterpillar stage. The eggs vary in shape, size, and color. Some butterfly species lay their eggs singly, others in groups or clusters. It takes from four to ten days for the butterfly egg to hatch into a young caterpillar.

Larva or Caterpillar

The young caterpillar’s first meal is usually its own eggshell, then the young leaves and flower buds around it. If a cluster of eggs all hatch together, the larvae will often skeletonize the leaf, since they can’t chew through the tough veins.

Caterpillars make a juicy meal for birds and other creatures. As a result, caterpillars come in a variety of camouflage colors or they have other defenses, like sharp spines. A few eat food toxic to their predators, and advertise the fact with bright colors. Because caterpillars don’t have skins that stretch, they shed their skins as many as five times from egg to pupa, getting larger each time. In the three to four weeks butterflies spend in their caterpillar stage, their host plants can begin to look ragged.
What Every Gardener Should Know

Pupa or Chrysalis

On the last days of its caterpillar existence, the final caterpillar/larva might change color, move away from the host plant, and find a spot for the next stage of metamorphosis. Some species will head for the leaf litter on the ground, or find a branch on a tree or bush from which to hang. In the chrysalis stage, the creature is inert, defenseless, and very vulnerable. So, it is usually camouflaged in brown or green colors, to hide among its surroundings. Sometimes you can spot a chrysalis in a tree or a bush in your yard, hanging like a small shroud-like ornament. It is important not to touch or disturb the creature. This stage of life can last one to two weeks, depending on the species and the season. Some species spend the winter season in this stage, especially in cold climates, waiting for temperatures and conditions to signal their release to the next stage.

Adult Butterfly

The butterfly breaks open the chrysalid casing and clings to the empty shell while it unfolds its wings and gets its body fluid pumping. The wings are very moist and fragile, and can take an hour or more to harden. Then the adult butterfly seeks warmth, sunlight, nectar, and eventually a mate and a place to lay the next generation of eggs. The butterfly has ended its transformations, and will retain this form until its death.

Butterflies no longer have chewing mouthparts, as they did when they were caterpillars. Instead, they consume all nutrients by drinking. They have only a long “proboscis” – a straw-like tongue – that sips sugary nectar from flowers. The butterfly does not gather nectar while in flight. It must stand on something, while it extends its proboscis into the food. As a result, butterflies tend to prefer flowers that offer foot-holds: daisy-shaped, spikes, and clusters. They also need water and salts, and like sipping at the edges of little puddles. They’re often found feeding on tree saps, rotting fruit, animal dung, and even carrion. Scientists have proven that the more carbohydrates and sugars it imbibes, the longer a butterfly will live, regardless of species. Adult butterflies cannot cause any damage to the garden at this stage, as they can when they are caterpillars.

Butterflies are cold-blooded, so they require warmth and sunlight to keep going. On cool or cloudy days, most butterflies won’t fly at all. At night, they close their wings and roost in some sheltered place.

CHAPTER FOUR

The Ultimate Butterfly Gardens

Many county residents are building new houses on blank tracts of ground without a clue how to landscape them. Why not create a haven for butterflies? Why not landscape with our native plants – ones that butterflies and other wildlife have depended on for thousands of years? Or why not landscape with some tried-and-true adapted plants from Galveston County’s own “recommended” list? In essence, why not create a yard that takes little care to maintain, is beautiful in all seasons, and provides an oasis for our butterflies?

Anna Wygrys, a longtime Galveston County Master Gardener and butterfly enthusiast, has designed a landscape plan for any home that features butterfly-friendly native plants. Many new and existing homes have just an empty, sunny corner that cries out for some landscaping. Dick Wetling, another veteran Master Gardener with a flair for design, has drawn up a landscape plan for a corner garden, using adapted plants commonly found at our area nurseries and home-improvement stores.

Best of all, these are landscape designs for all seasons, with plants that sustain butterflies throughout the year.

Residents who wish to conserve something of our regional horticultural heritage are encouraged to use and adapt these plans to their own home yards.

Think of these gardens as personal nature preserves, where the 83 species that inhabit or transit through our county can converge, feed, and thank the homeowner’s hospitality in the only way they can: with clouds of their colorful, fluttering beauty dancing in the sunshine.

Corner Garden For Butterflies

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>HEIGHT</th>
<th>FLOWER COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrimp Plant</td>
<td>Justica brandegena</td>
<td>2-3 feet</td>
<td>White/orange</td>
</tr>
<tr>
<td>Hummingbird Bush</td>
<td>Hamelia patens</td>
<td>6-8 feet</td>
<td>Orange/red</td>
</tr>
<tr>
<td>Butterfly Bush</td>
<td>Buddleia lochinch</td>
<td>5-6 feet</td>
<td>Lavender</td>
</tr>
<tr>
<td>Turk’s Cap</td>
<td>Malvaiscus aboreus</td>
<td>4-5 feet</td>
<td>Red</td>
</tr>
<tr>
<td>Butterfly Weed</td>
<td>Asclepias curassavica</td>
<td>3-4 feet</td>
<td>Orange</td>
</tr>
<tr>
<td>Penta</td>
<td>Penta lancelata</td>
<td>2-3 feet</td>
<td>Red/orange</td>
</tr>
<tr>
<td>Aster–annual</td>
<td>Tanacetifolius</td>
<td>2-3 feet</td>
<td>Purple</td>
</tr>
<tr>
<td>Salvia</td>
<td>Convolvulus tricolor</td>
<td>1 foot</td>
<td>Multiple colors</td>
</tr>
</tbody>
</table>

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Migrations

The famous Monarch butterflies have no ability to endure freezing in any stage of their life cycle, so they do their magnificent migration to Southern California and Mexico every year, to roost in trees they’ve used for centuries. However, most North American butterfly species survive winter in the egg or pupa form wherever they reside. Others, like our Hackberry Butterflies, have a natural kind of antifreeze in their bodies and spend winter as adults, hiding behind loose bark or in the hollows of trees.

Some of our Galveston County species are “emigrators,” which means they are born from populations well south of here and disperse northward into our county and elsewhere to find food. This group of emigrators include the Gulf Fritillary, the Little Yellow Sulphur, and the Great Southern White. Usually they follow habitual routes and arrive predictably in their season. But more uncertain behavior characterizes the Checkered White which can range all over Texas, but not predictably. Sometimes, Checkered Whites will reside here for one breeding season and then not be around again for many years.

Dangers

The greatest danger to butterfly survival is weather. Extreme cold, early freezes, strong winds, and heavy rains can take their toll at all stages of butterfly existence. Gardeners often place host plants along sheltering walls with overhangs, or provide windbreaks or specially stacked woodpiles to give butterflies some shelter.

Birds, rodents, lizards, and some insects feed on butterflies at various stages too. The biggest new problem challenging butterflies in our country are fire ants. While gardeners cannot protect butterflies from all threats to their survival, using a bait method of controlling fire ants can help our local populations.

The other danger is us. We tend to forget that butterflies are insects. So, while we are spraying our yards for other insects, we are destroying butterflies too. It is important to avoid use of pesticides as much as possible and practice integrated plant management with some dedication and energy, in order to encourage butterfly populations growth.

Finally, the destruction of their habitats and their host plants by residential and commercial development can be ameliorated somewhat by the reintroduction of host and nectar plants to our home yards and community gardens.

Homeowners will find a new joy in planting some of the gorgeous host and nectar plants in their yards — and watching the splendor that unfolds when an excited population of butterflies flutters into existence because of it.
Don’t Kill These Caterpillars!!!

Black Swallowtail caterpillar GCMGA
Black Swallowtail adult butterfly GCMGA
Gulf Fritillary caterpillar GCMGA
Gulf Fritillary adult butterfly TCE/TAMU
Monarch larva caterpillar GCMGA
Adult Monarch butterflies TCE/TAMU
Long-tailed Skipper caterpillar GCMGA
Adult Long-tailed Skipper butterfly TCE/TAMU

Water and Mud

All creatures need water. Butterflies like to drink from the moist edges of streams and from the edges of puddles. If one has a bird-bath in the back yard, a few rocks along the shallow edge would allow butterflies to perch as they sip.

It’s not unusual to see a flock of butterflies — especially blues, sulphurs, swallowtails, and some skippers — gathered around a mud puddle. This behavior is called “puddling” and is done by the male butterflies, who need extra salt, amino acids, and minerals for mating. As a result of this mineral need, they can be attracted to carrion, dung of all kinds, septic tanks — the more contaminated, the better. Even puddles on driveways or patios that have little soil collections at the bottom prove useful to butterflies who can use the trace minerals leached from the cement and soil.

To attract puddling, one can create a little puddling “station” as recommended by some authors. This involves constructing a small plastic-lined depression in the ground, isolated from surrounding plants and filled with moist sand, a sprinkling of table salt, and a tiny bit of manure. It’s important to keep the area moist.

Rotten Fruit

Butterflies adore over-ripe bananas and peaches, along with rotting plums, pears, melons, and other fruit. Many people put up feeding stands for butterflies — nothing more than a flat piece of board on a stand about four feet high, that will hold a plate of rotten fruit. Set the plate in the sunshine and within a day or so, the butterflies will come calling along with some wasps and other insects. Some experts recommend adding a dash of fruit juice, rum, beer, brown sugar, or yeast to the mound of fruit to give it an extra kick. An effective way to keep ants away is to grease the pole supporting the stand with lots of petroleum jelly or wind sticky tape around it. If a table or chair is used instead of a stand, one can place the bowl of rotten fruit inside a larger bowl of water, to create a kind of moat that will keep the ants out.

Wood Piles

Firewood logs — stacked layer-by-layer (each layer at right angles to one below) in log cabin fashion — make a terrific shelter and butterfly roosting place. Here they can get out of the wind, be safe from predators, be sheltered from rain, and hang their chrysalis.
CHAPTER TWO

The Butterflies of Galveston County

The U.S. Geologic Survey lists 83 species of butterflies that inhabit or transit through Galveston County. More than half of these species are spread out across most of Texas. Dozens more inhabit pockets of East Texas and the coastal counties of Texas. A handful are found in Galveston County and just a few adjacent counties. Four butterfly species have been spotted in Galveston County and not in any of the adjacent counties.

There are six families of butterflies in our county: Swallowtails, Whites and Sulphurs, Gossamer-wing Butterflies, Metalmarks, Brush-footed Butterflies, and Skippers.

Swallowtails (Family Papilionidae)

Swallowtails are the biggest and showiest butterflies, so named because of their shape, the tails on their hind wings. All seven swallowtail species found in Texas can be found in Galveston County. In fact, one species – the Two-tailed Swallowtail – is found only in the Galveston-Harris County area and the Big Bend region. In the caterpillar stage, two species focus on pipevine host plants, two others on citrus trees, two more on magnolia, ash, cottonwood, and willow trees, and one adores the spicebush.

Whites and Sulphurs (Family Pieridae)

This family enjoys almost worldwide distribution. Most members are small, and are white or yellow in color, just like their name. Ten of these species are in Galveston County, half of which are found throughout most of Texas. However, five species are found just in Galveston County and a few adjacent counties. As caterpillars, the sulphurs tend to eat legumes like peas and alfalfa, while the whites favor the mustard family. The whites can become a problem for cabbage and other garden crops.

Gossamer-wing Butterflies (Family Lycaenidae)

The Gossamer-wing Butterflies consist of nearly 6000 different species in four subfamilies. Most species have two or more wings which are transparent, and all share a certain distinctive wing structure. They tend to be brilliantly colored with two different types of scales on their wings.

Thirteen species of two subfamilies of Gossamer-wing Butterflies – the Hairstreaks and the Blues – inhabit Galveston County. Most are found in the southern, eastern or coastal portions of Texas. However, four species are restricted to Galveston County and a few adjacent counties, and one – the Soapberry Hairstreak – is found in Galveston County alone in this region.

This group enjoys a wide-ranging list of host foods which include fallen leaves of trees, woody bushes, peas and mallow plants, and many others. The Soapberry Hairstreak loves Western Soapberry – a woody plant. The smallest butterfly in our region – the Western Pygmy-Blue – prefers the rugged native vegetation like pigweed and salt bush.

Host Plants for Caterpillars

- Viceroy cottonwood, poplar, willow
- Texas Crescent Acanthus, Ruellia, shrimp plant, Dicliptera, tube-tongue
- Tawny Emperor hackberry
- Spicebush Swallowtail camphor tree, sweet bay, red bay, sassafras, tulip tree
- Southern Skipperling bermudagrass
- Snout Butterfly hackberry
- Sleepy Sulphur partridge pea, Cassia, Senna
- Silver Spotted Skipper false indigo, black locust, wisteria
- Silver-stemmed Skipper peartree past, Cassia, Senna
- Small Butterfly blackberry
- southern Skipperling browallia
- Speckled Wood butterfly cypress, senna
- Swamp Emperor Texas Crescent, Ruellia, shrimp plant, Dicliptera, tube-tongue
- Viceroy cottonwood, poplar, willow
Metalmarks (Family Riodinidae)

Metalmarks get their name from their wonderful rusty, burnt-orange color, which shines like metal. Though two dozen Metalmark species are found in North America, only one is found in Galveston County – the Little Metalmark. This creature inhabits salt-marsh and meadow areas, feeding on yellow thistle and wild yarrow.

Brush-footed Butterflies (Family Nymphalidae)

Fifteen species of eight subfamilies of Brush-footed butterflies find their way to Galveston County, including the world-favorite Monarchs which amaze us with their lengthy and colorful migrations. These 15 beautiful and diverse species are found all over Texas, and inhabit a large and varied number of ecosystems. The caterpillar food range is broad with this family, but it includes our ubiquitous hackberry trees and our lovely passion vines.

Creating a Butterfly Garden

Design

If you’re interesting in planting a butterfly garden that will sustain the insects in all their stages of development, there are a few design principles to keep in mind.

Location

Full sun is vastly preferable. In wooded areas, some people have opened a little clearing for sunshine in a dense woodland garden – and have achieved great success attracting butterflies. Also, if the location is windy, it is good to provide a windbreak of trees, shrubs, or trellised vines. Many residential developments include fences or walls. It would be ideal to plant passionflower vine, Dutchman’s pipe, wisteria, and trumpet honeysuckle along these to attract butterflies.

Butterflies like to fly over spaces unimpeded. Our Galveston County butterflies are specially adapted to our flat, open meadows, pastures, marshes, and prairies. If one is creating a butterfly garden in a suburban back yard, it’s good to imitate nature as much as possible, and have some wide-open spaces and broad pathways, so butterflies can fly unobstructed.

Varied Height

Some of our butterfly species, like the Swallowtails, prefer tall flowers, while others, like the Skippers prefer small plants close to the ground. So a good design principle is to vary the height of the plants in the butterfly garden. Place host and flowering bushes at the back, and then masses of tall flowers, then medium ones, then ground-hugging varieties – in essence, staging them downward, from tall to short.

Seasonal Selection

It’s good to select annuals that have long bloom seasons, mixed with perennials that bloom at different times of year.

Host Plants

For a butterfly population to thrive, it’s important to include plants that host butterfly eggs and caterpillars too. These plants will be munched on and may look ragged for a few weeks, but the population of butterflies will thrive as a result of feeding on these plants. This is especially true of duranta, passion vine, butterfly weed, lantana, any citrus tree, penta, bronze fennel, dill and parsley.

Precautions

1. Avoid all insecticides, as with nectar plants.
2. Use netting or floating row covers. If some vegetable crops – like cabbage, peas, fennel and dill – require protection from butterfly caterpillars, it’s good to use a physical barrier like mesh net row covers to keep egg-laying butterflies from establishing their brood there.
3. Be tolerant. You might have to put up with some imperfect looking plants for a few weeks, but you’ll be repaid by clouds of butterflies inhabiting your yard.
### What Every Gardener Should Know

#### Nectar Plants for Butterflies

<table>
<thead>
<tr>
<th>Family</th>
<th>Common Name</th>
<th>Native Range</th>
<th>Bloom Time</th>
<th>Sunlight Requirement</th>
<th>Soil Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HERBS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Anthoxanthum odoratum</em></td>
<td>Twinflower</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Sun to Part Shade</td>
<td>Moist to Dry</td>
<td>3'-4'</td>
</tr>
<tr>
<td><em>Asclepias curassavica</em></td>
<td>Butterfly Weed</td>
<td>Native</td>
<td>Full Sun</td>
<td>Part Shade</td>
<td>Well-drained</td>
<td>4'</td>
</tr>
<tr>
<td><em>Asclepias syriaca</em></td>
<td>Milkweed</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'</td>
</tr>
<tr>
<td><em>Asclepias tuberosa</em></td>
<td>Texas milkweed</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Part Shade</td>
<td>Wet to Dry</td>
<td>4'</td>
</tr>
<tr>
<td><em>Buddleia davidii</em></td>
<td>Butterfly Bush</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Part Shade</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Carduus nutans</em></td>
<td>Ragwort</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'</td>
</tr>
<tr>
<td><em>Cascina americana</em></td>
<td>Cascina</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'</td>
</tr>
<tr>
<td><em>Coreopsis tinctoria</em></td>
<td>Coreopsis</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'-6'</td>
</tr>
<tr>
<td><em>Lysimachia punctata</em></td>
<td>Moneywort</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'-6'</td>
</tr>
<tr>
<td><em>Melampodium divaricatum</em></td>
<td>-</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'-6'</td>
</tr>
<tr>
<td><em>Monarda didyma</em></td>
<td>Bee Balm</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'-6'</td>
</tr>
<tr>
<td><em>Monarda fistulosa</em></td>
<td>Oswego tea</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'-6'</td>
</tr>
<tr>
<td><em>Monarda pectinervia</em></td>
<td>Oswego Penny</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>3'-6'</td>
</tr>
<tr>
<td><em>Nerium oleander</em></td>
<td>Oleander</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Part Shade</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Ophrys apifera</em></td>
<td>Orchid</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Papaver nudicaule</em></td>
<td>Quail's horn</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Passionaria praecox</em></td>
<td>-</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Penstemon digitalis</em></td>
<td>-</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Piper tenuiflorum</em></td>
<td>-</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Rudbeckia laciniata</em></td>
<td>-</td>
<td>Native</td>
<td>Summer to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
<tr>
<td><em>Salvia elegans</em></td>
<td>-</td>
<td>Native</td>
<td>Spring to Fall</td>
<td>Full Sun</td>
<td>Well-drained</td>
<td>4'-6'</td>
</tr>
</tbody>
</table>

#### Skippers (Family Hesperiidae)

Twenty-seven of the 83 butterflies that inhabit Galveston County are Skippers. Skippers get their name by the way they fly — fast, erratic, darting, and changing direction. They are widely scattered across the East Texas. Their larval food is almost exclusively grasses and sedges. Five species inhabit Galveston County and a few counties around it. Three species are found in Galveston County alone, not in any of the adjacent counties: The Mercurial Skipper, the Tailed Aguna, and the False Dustwing.

#### Information

For more exact information about and pictures of the 83 butterflies of Galveston County, readers should go directly to the USGS website: www.npwrc.usgs.gov/resource/DISTR/LEPID/BFLYUSA/chklist/states/counties/tx_167.htm or www.google.com then type in the search engine: Butterflies Galveston County Texas. The page will come up immediately. One can then click on each individual butterfly on the list to bring up pictures of the egg, the caterpillar, the chrysalis, and the adult butterfly of that species, along with written information about its range, season, eating habits, and behavior.

For those who don’t have Internet access, a fabulous book called the Butterflies of Houston & Southeast Texas by John and Gloria Tveten is available in area libraries and bookstores. The book contains very detailed information on each butterfly in our region, along with splendid color pictures of each.
Butterflies of Galveston County, Texas

Swallowtails (Family Papilionidae)

Swallowtails (Subfamily Papilioninae)
- Pipevine Swallowtail (Battus philenor)
- Polydamas Swallowtail (Battus polydamas)
- Black Swallowtail (Papilio polyxenes)
- Giant Swallowtail (Papilio cresphontes)
- Eastern Tiger Swallowtail (Papilio glaucus)
- Two-tailed Swallowtail (Papilio multicaudate)
- Speckled Swallowtail (Papilio ephialtes)

Whites and Sulphurs (Family Pieridae)

Whites (Subfamily Pierinae)
- Checkered White (Poncia protodice)
- Cabbage White (Pieris rapae)
- Great Southern White (Ascia monuste)
- Giant White (Ganhyra josephina)

Sulphurs (Subfamily Coliadinae)
- Clouded Sulphur (Colias philodice)
- Orange Sulphur (Colias eurytheme)
- Yellow Angled Sulphur (Colias eurytheme)
- Clouded Sulphur (Colias eurytheme)

Gossamer-wing Butterflies (Family Lycaenidae)

Hairstreaks (Subfamily Cliphoideae)
- Soapberry Hairstreak (Phanourus elatius)
- Southern Hairstreak (Pieris virginius)
- Gray Hairstreak (Strymon melinus)

Blues (Subfamily Polyommatinae)
- Western Pygmy Blue (Berothidium exile)
- Eastern Pygmy Blue (Berothidium isophthalma)
- Marine Blue (まれなきarena)
- Ceranna Blue (Hemicyclus arenus)
- Realw's Blue (Hemicyclus isola)
- Eastern Tailed Blue (Everes comyntas)
- Spring Azure (Celastrina ladon)
- Summer Azure (Celastrina neglecta)

Butterfly Plants for Galveston County

Setting up your garden or yard for butterfly activity requires a little understanding of butterfly behavior.

Attracting Adult Butterflies

Butterflies are cold-blooded, and require temperatures above 60 degrees to become active. They need sunshine to keep their body temperature at between 85-100 degrees in order to fly. As a result, placing rocks or evergreens around the yard to catch and absorb early morning sun provides butterflies with a perch — a place they can bask, warm up, and get an early start. During our hot days of summer, butterflies will be earlier risers than during the spring and fall.

At night and on rainy, windy, blustery days, butterflies will find a sheltered roost to conserve their energy. It might be under a leaf or in the hollow of a tree. The roosts are very hard to find.

In general, butterflies will spend 14 hours a day basking in the sun between 85-100 degrees in order to fly. As a result, placing rocks or evergreens around the yard to catch and absorb early morning sun provides butterflies with a perch — a place they can bask, warm up, and get an early start. During our hot days of summer, butterflies will be earlier risers than during the spring and fall.

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Butterfly Preferences

If you want to attract butterflies to your yard, it’s important to bear in mind a few important principles:
1. Butterflies love sunshine, so it’s good to locate nectar plants in a sunlit part of the yard.
2. More is better. If nectar flowers are not planted in small scattered clumps, but are massed together to provide a large area of fragrance and color, the more likely butterflies will linger in your yard.
3. Butterflies need to cling to a blossom while sucking nectar through its straw-like proboscis, they favor certain nectar plants over others. First, they like plants with clusters of small flowers - lantana, goldenrod, and asters - where many flowers are concentrated in one place. They also like tubular spiked flowers - pineapple sage and butterfly bush - that offer a long stem of many small flowers; this way, they can visit each tiny flower in succession without flying to another location. Finally, they like certain simple daisy-shaped flowers - Black-eyed Susans, sunflowers, zinnias - which are comprised of numerous tiny, tubular, nectar-bearing flowers.

Any homeowner can plant these beautiful nectar-bearing plants in an existing landscape, and attract some butterfly activity to the yard. Purple, pink, yellow, white, blue and red are the most attractive flower colors to butterflies. Plan to do several plantings at monthly intervals to keep the nectar source available throughout our lengthy summer season.

Whenever possible, use heirloom varieties of plants, since these tend to provide more nectar than modern hybrid varieties which may have bigger flowers. This is especially true of zinnias.

Butterfly No Nós

Avoid insecticides. Butterflies are insects, and will be killed by our insecticides. This includes “organic” pesticides like Bt (Bacillus thuringiensis), which kill butterfly caterpillars as well as other caterpillars.

Here is a list of nectar-bearing plants (and the butterflies they will attract) for our area.
Butterflies of Galveston County

**Metalmarks**
*(Family Riodinidae)*

*Little Metalmark* (*Calycopis cecropia*)

**Brush-footed Butterflies**
*(Family Nymphalidae)*

**SNOUTS**
*(Subfamily Libytheinae)*

*American Snout* (*Libythea carinenta*)

**HELICONIANS AND FRITILLARIES**
*(Subfamily Heliconiinae)*

*Variegated Fritillary* (*Euphyes claudia*)

**TRUE BRUSH-FOOT**s
*(Subfamily Nymphalinae)*

*Phaon Crescent* (*Phyciodes phaon*)

*Painted Lady* (*Vanessa cardui*)

*Red Admiral* (*Vanessa atalanta*)

*Common Buckeye* (*Junonia coenia*)

**ADMIRALS AND RELATIVES**
*(Subfamily Limenitidinae)*

*‘Astyanax’ Red-spotted Purple* (*Limenitis arthemis astyanax*)

**LEAFWINGS**
*(Subfamily Charaxinae)*

*Goatweed Leafwing* (*Anaea andria*)

**EMPERORS**
*(Subfamily Apaturinae)*

*Hackberry Emperor* (*Asterocampa celtis*)

*Tawny Emperor* (*Asterocampa clyton*)

**SATYRS**
*(Subfamily Satyrina)*

*Gemmed Satyr* (*Cyllopsis gemma*)

*Carolina Satyr* (*Hermeuptychia sosybius*)

*Little Wood Satyr* (*Megisto cymela*)

**MONARCHS**
*(Subfamily Danainae)*

*Monarch* (*Danaus plexippus*)

**Skippers**
*(Family Hesperiidae)*

**SPREAD-WING SKIPPERS**
*(Subfamily Pyrginae)*

*Mercurial Skipper* (*Proteides mercurius*)

*Silver-spotted Skipper* (*Epargyreus clarus (incl. huachuca]*)

*Tailed Agama* (*Agama melampus*)

*Long-tailed Skimmer* (*Umbonia vetula*)

*Southern Cloudywing* (*Thorybes bathyllus (daunus]*)

*False Duskywing* (*Grammia vicina*)

*Jerenål’s Duskywing* (*Erynnis jerenal*)

*Horace’s Duskywing* (*Erynnis horatius*)

*Funereal Duskywing* (*Erynnis funeralis*)

**GRASS SKIPPERS**
*(Subfamily Hesperiinae)*

*Martha’s Skipper* (*Nastra martha*)

*Neamathla Skipper* (*Nastra neamathla*)

*Clouded Skipper* (*Lerema accius*)

*Whirlabout* (*Polites vibex*)

*Southern Broken-Dash* (*Wallengrenia otho*)

*Sachem* (*Atalopedes campestris*)

*Broad-winged Skipper* (*Poanes viator*)

*Salt Marsh Skipper* (*Panoquina panoquina*)

*Obscure Skipper* (*Panoquina panoquina.*)
Gallery of Butterfly Plants and Their Culture

**PRIDE OF BARBOSA** - perennial bush, orange, red, and yellow, 6' - sun to partial shade, blooms spring through fall, drought tolerant

**MORNING GLORY** - re-seeding annual, many colors, full sun, good drainage, blooms spring until frost

**MAYPOP PASSION FLOWER** - perennial, many colors, full sun, good drainage, blooms spring until frost

**TURK'S CAP** - perennial shrub, red, 3' x 5' - sun to partial shade, good drainage, blooms late spring until frost

**ZINNIA** - re-seeding annual flower, many colors, 2' - full sun, good drainage, blooms later spring until frost, drought tolerant, use heirloom varieties

**DAISY** - re-seeding annual flower, many colors, 3' - full sun, blooms spring through summer, drought tolerant

**PENTA** - perennial bush, many colors, 1'-2' - full sun to partial shade, good drainage, blooms summer until frost

**SALLA (Indigo Spires variety)** - perennial flower, 3'-4', many varieties and colors - afternoon shade, good drainage, blooms spring until frost, drought tolerant

**MILKWEED** - perennial wildflower, many varieties, 1'-2' - full sun, good drainage, blooms spring through summer

**RUELLIA** - sprawling perennial flower, many colors, 2' - semi-shade, blooms spring until frost

**CONIFLOR** - perennial flower, many colors, 1'-3' - full sun, good drainage, blooms spring until frost, drought tolerant

**LANTANA** - perennial bush, many colors, 2'-4' - full sun to part shade, good drainage, drought tolerant

**CONEFLOWER** - perennial flower, many colors, 1'-3' - full sun, good drainage, blooms spring until frost, drought tolerant

**PHLOX** - perennial bush, many colors, 2' - full sun, good drainage, blooms spring through summer, drought tolerant

**CONEFLOWER** - perennial flower, many colors, 1'-3' - full sun, good drainage, blooms spring until frost, drought tolerant

**MALLOW** - perennial bush, many colors and heights, full sun, good drainage, blooms spring until frost, drought tolerant

**PHLOX** - perennial bush, many colors, 2' - full sun, good drainage, blooms spring through summer, drought tolerant

**PENNYWORT** - reseeding annual flower, many colors, full sun, good drainage, blooms spring until frost, drought tolerant