Notes

THE ANN and O.J. WEBER BUTTERFLY GARDEN TRAIL GUIDE

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THE ANN and O.J. WEBER BUTTERFLY GARDEN

Diversity of Plants and Habitats

The Ann and O.J. Weber Butterfly Garden at the Lady Bird Johnson Wildflower Center is designed as a native butterfly habitat to attract and sustain butterflies and other invertebrates. A diversity of plants is used to create a variety of habitat types, including a pond, a marsh, seeps, streambeds, thickets, meadows, woodlands, woodland edges and a rocky knoll.

Paths and Benches

Meandering paths include nine different seating areas where you can sit and quietly observe the activity of pollinators, other invertebrates, birds and occasionally other animals. Additional educational information is available at each bench.

Observing and Learning

Looking for invertebrates can sometimes be easy, as they buzz around the garden. But don't forget to look under leaves, low to the ground, and in pools of water, where many insects are busy aerating soil, nourishing plants with their droppings, or eating dead plant and animal material. Observation can reveal a complex web of life.

Pickerelweed	Pontederiaceae	An excellent nectar source for longer-tongued butterflies.
Plane-Tree	Platanaceae	A minor larval food plant for one of the **FLUTED SWALLOWTAILS.**
Plantain	Plantaginaceae	In the larval menu of some **CHECKERSPOTS.**
Plumbago	Plumbaginaceae	In the larval menu of one of our **BLUES.**
Pokeweed	Phytolaccaceae	Not a major nectar source for butterflies.
Purslane	Portulaceae	A common larval food plant for several butterflies and moths. Not a major nectar source for butterflies.
Rose	Rosaceae	Nectar source for larger butterflies. In the larval menu of some **HAIRSTREAKS, FLUTED SWALLOWTAILS, BRUSHFEET** and **ADMIRALS.**
Rush	Juncaceae	Not a nectar source for butterflies.
Sapodilla	Sapotaceae	Nectar source for small butterflies. Larval food for some moths.
Sedge	Cyperaceae	In the larval menu of many **BRANDED SKIPPERS**.
Soapberry	Sapindaceae	Abundant nectar source for many butterflies. Essential larval food for one **HAIRSTREAK.**
Spiderwort	Commelinaceae	Not a great nectar source for butterflies.
Spurge	Euphorbiaceae	Essential larval food for many **EMPERORS, ADMIRALS**, and **HAIRSTREAKS.**
Sumac	Anacardiaceae	In the larval menu of some **HAIRSTREAKS** and **BLUES**.
True Fern	Polypodiaceae	Spoor producer, so doesn't produce nectar. A few **Geometrid Moths** (inch worms) can handle the toxins and feed on the leaves.
Unicorn-Plant	Martyniaceae	Nectar source for long-tongued butterflies and moths.
Verbena	Verbenaceae	In the larval menu of **CHECKERSPOTS** and other **BRUSHFEET**, some **FLATS**, and **HAIRSTREAKS.** Abundant nectar source for all butterflies.
Violet	Violaceae	In the larval menu of some **FRITILLARIES** and other **BRUSHFEET.**
Walnut	Juglandaceae	In the larval menu of some **HAIRSTREAKS.**
Water plantain	Alismataceae	Not a great nectar producer for butterflies.
Waterleaf	Hydrophyllaceae	A seasonal nectar source for small and medium size butterflies.
Willow	Salicaceae	In the larval menu of some **FLUTED SWALLOWTAILS, ADMIRALS, BRUSHFEET** and **HAIRSTREAKS.**
Wood-Sorrel	Oxalidaceae	In the larval menu of one of our **BLUES.**

Knotweed	Polygonaceae	In the larval menu of some **METALMARKS** and some **CHECKERSPOTS.**
Laurel	Lauraceae	Essential larval food for many **FLUTED SWALLOWTAILS**.
Legume	Fabaceae	Essential larval food for many **HAIRSTREAKS** and **BLUES, SKIPPERS,** and some **BRUSHFEET**. Nectar source for long-tongued butterflies. Fuzzy acacia flowers are abundant nectar source for all butterflies.
Logania	Loganiaceae	An excellent nectar source for small butterflies.
Mallow	Malvaceae	In the larval menu of many **FLATS** & **PAINTED LADIES** and some **HAIRSTREAKS** and **BLUES.**
Malpighia	Malpigiaceae	In the larval menu of **HAIRSTREAKS** and **BLUES.**
Milkweed	Asclepiadaceae	Essential larval food of **MONARCH** and other **MILKWEED** butterflies. Abundant nectar source for all butterflies.
Mint	Labiatae	Abundant nectar source for many butterflies, especially **BRUSHFEET.**
Mistletoe	Viscaceae	Essential larval food for one of our **HAIRSTREAKS** and some tropical **WHITES.**
Moonseed	Menispermaceae	In the larval menu of a few moths.
Morning Glory	Convolvulaceae	Nectar source for long-tongued **SKIPPERS** and moths.
Mulberry	Moraceae	Very important larval food of many **ADMIRALS** and some **BRUSHFEET**. Fruit is in the menu of **DAGGERWING** butterflies. Rotting fruit is attractant for many butterflies, especially **LEAFWINGS**.
Mustard	Cruciferae	Essential larval food for many **WHITES.**
Nettle	Urticaceae	Essential larval food for **RED ADMIRALS** and several other **BRUSHFEET.**
Nightshade	Solanaceae	Essential larval food for some tropical **MILKWEED** butterflies.
Olive	Oleaceae	In the larval menu of some **FLUTED SWALLOWTAILS** and some **BRUSHFEET.**
Orchid	Orchidaceae	Not a major nectar source for butterflies. Mostly visited by bees.
Orpine	Crassulaceae	Essential larval food for 1 rare **HAIRSTREAK.**
Palmaceae	Palmaceae	Rarely blooms, but an attractive nectar source for butterflies.
Parsley	Umbelliferae	Essential larval food for some **FLUTED SWALLOWTAILS**. Nectar source for small butterflies.
Passion-Flower	Passifloraceae	Essential larval food of **HELICONIAN BRUSHFEET.**
Pepperwort	Marsileaceae	Neither a nectar or pollen source for butterflies or other invertebrates.
Phlox	Polemoniaceae	Not a major nectar source for butterflies. Visited by moths at night.

Ecological Heritage

The Balcones Canyonlands portion of the Texas Hill Country, with its aquifer, springs and protected valleys, has acted as a refuge for flora and fauna that existed across many regions of Texas in the past. Because of its varied history, each different rock or soil type favors or supports different biological communities that are sometimes situated close together. Not only do we have eastern swamp plants (Dwarf Palmetto) growing within a hundred feet of desert plants (Mormon Tea), but we have butterfly equivalents existing side by side. The eastern Comma butterfly mingles with the tropical Zebra butterfly. Adding to the approximately 189 butterflies residing in Central Texas, many Mexican butterflies stray into the state from the subtropics. Most can't survive the cold winters here, but they will stay around for several years until killed by freezes. Autumn is the best time to look for these visitors.

Feeding habits of butterflies are quite varied. Most butterfly larvae eat flowers, grasses, shrubs and trees. The larvae of two families feed only on grasses, our one carnivorous butterfly prefers woolly aphids, and two other species survive on leaf litter. The majority of adult butterflies feed on nectar, but some prefer tree sap or fermenting and decaying material, including dead animals and feces.

Environmental Citizenship

In some ways our use of land has benefited most butterflies by opening up forests and providing many edge habitats and disturbed places. In other subtle ways we've done great accidental harm. Moths have declined in our brightly lit nights. Caterpillars have suffered from non-targeted pesticides, even from the organic pesticide BT.

Think twice about the side effects of your pest control efforts. Keep outside lighting to a minimum. Bug zappers sound like they are working. But, they're not very effective against mosquitoes, and they are a drain on the local moth population.

Plant a diversity of native species to enrich your garden and develop pocket habitats for butterflies and other invertebrates. Encourage people in your neighborhood to do the same.

Look Closely

Since the garden provides food and shelter for all life stages of butterflies and other invertebrates, look for eggs, larvae and pupae as well as adults. Bring binoculars and practice your observational skills. See if you can identify signs of invertebrate activity, such as nibbles from leaves and leftover casings. With time you can spot even the tiniest of creatures.

Enjoy!

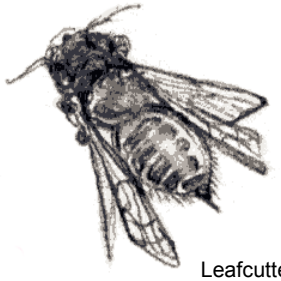
POLLINATORS

Can Flowers Live Without Pollinators?

Pollination is the process where pollen grains (male sex cells) are moved from one flower to another flower's stigma (female sex cell), where seeds will be produced. Some flowers can actually self-pollinate, but this is not too common. Since plants are not able to move, they have evolved two ways to pollinate. Some plants rely on wind to blow their pollen from flower to flower. Most plants rely on animals, who can carry pollen while travelling from plant to plant. This relationship is mutually beneficial to animal and plant. The animal gets protein from eating pollen and the plant is assured of survival. Without pollination, most plants, as well as many of the pollinating animals, would cease to exist.

The most important pollinators are flies, bees, beetles, butterflies and moths. To a much lesser extent, some birds, mammals and reptiles also pollinate many plant species. Pollination of flowers is essential to keeping an ecosystem healthy and functioning.

Bees



Leafcutter Bee
(*Coelioxys octodentata)*

There are over 200 species of bees in Travis County. The majority are solitary bees that nest by burrowing into soil. Some are more communal, with several females sharing a nest. Pollen provides the protein that bees need. Bees supplement pollen with nectar, which they often turn into honey. Some bees collect pollen from a wide range of flowers, while others visit specific host plants. Wild bees are generally lumped into two groups: short tongued and long-tongued. The length of the tongue will have an effect on a bee's choice of flower.

Cactus	Cactaceae	Not a great nectar producer, but visited by many beetles, bees and wasps for pollen.
Caltrop	Zygophyllaceae	Essential larval food for one of our **SULPHURS** and one of our **BLUES.**
Canna	Cannaceae	Essential larval food for some **BRANDED SKIPPERS.**
Caper	Capparidaceae	Essential larval food for some tropical **WHITES.**
Catalpa	Bignoniaceae	Attractive nectar source for larger butterflies.
Citrus	Rutaceae	Essential larval food of some **FLATS** and **FLUTED SWALLOWTAILS.** Nectar source for larger butterflies.
Crowfoot	Ranunculaceae	In the larval menu of one of our common **METALMARKS**.
Cypress	Cupressaceae	Essential larval food for some **HAIRSTREAKS.**
Dogbane	Apocynaceae	Fantastic nectar source for most butterflies. Larval food of some tropical **MILKWEED** butterflies.
Dogwood	Cornaceae	Not a nectar source for butterflies.
Ebony	Ebenaceae	In the larval menu of a few **HAIRSTREAKS** and **BLUES.** Nectar source for small butterflies.
Elm	Ulmaceae	Essential larval food for many **EMPERORS**, all **SNOUTS** and some **BRUSHFEET.**
Evening Primrose	Onagraceae	A minor nectar source mostly for moths at night.
Figwort	Scrophulariaceae	Essential larval food for many **CHECKERSPOTS.** Nectar source for long-tongued butterflies.
Flax	Linaceae	In the larval menu of some **BUCKEYES** and other **BRUSHFEET.**
Gentian	Gentianaceae	A minor nectar source for small butterflies.
Goosefoot	Chenopodiaceae	Larval food for some **FLATS** and **HAIRSTREAKS.**
Gourd	Cucurbitaceae	Not a nectar source for butterflies. Mainly pollinated by beetles.
Grape	Vitaceae	Abundant nectar source for all butterflies. Larval food for some day flying moths.
Grass	Poaceae	Essential larval food for most **BRANDED SKIPPERS** and most of the **SATYRS.**
Holly	Aquifoliaceae	Spring nectar source of small butterflies. In the larval menu of some **FLATS** and moth-like **SKIPPERS** and **HAIRSTREAKS**.
Honeysuckle	Caprifoliaceae	A great nectar source for moths with long tongues and a few **SKIPPERS** and **SWALLOWTAILS.**
Iris	Iridaceae	Not a major nectar source for butterflies. Beetles and wasps eat the pollen.

LIST OF PLANT FAMILIES
with
BUTTERFLY FAMILY INFORMATION

Approximately 80 plant families have been used to create the Ann and O.J. Weber Butterfly Garden. As additional plant families are added to the garden, this list will be revised.

Both larval and nectar uses are indicated. Since the garden is designed to be a diverse habitat for all pollinators, some plant families might not be of particular interest to butterflies.

While some butterflies only use specific plant species, most butterflies are generalists. This makes it difficult to create a comprehensive list of plants and associated butterflies. It is easier to list the plant families and to indicate how they are used by different butterfly families.

Common Family Name	Scientific Family Name	How Plant Family Is Used by Butterfly Families
Acanthus	Acanthaceae	In the larval menu of **CHECKERSPOTS** and some other **BRUSHFEET**.
Agave	Agavaceae	Essential larval food for many **GIANT SKIPPERS** in the **BRANDED SKIPPER** family.
Arowroot	Marantaceae	Not a major nectar source for butterflies.
Aster	Compositae	Abundant nectar source for all butterflies. Essential larval food for many **METALMARKS, BRUSHFEET**, and 1 **SULPHUR** butterfly.
Barberry	Berberidaceae	In the larval menu of some **HAIRSTREAKS** and **BLUES.**
Beech	Fagaceae	Essential larval food for many **HAIRSTREAKS, ADMIRALS**, and **FLATS.**
Birthwort	Aristolochiaceae	Essential larval food of a major tribe of **SWALLOWTAILS**.
Bluebell	Campanulaceae	An occasional nectar source for small butterflies.
Borage	Boraginaceae	Some Borages provide nectar source for smaller butterflies. Powerful chemical attractants, like catnip, for adult **MILKWEED** butterflies.
Buckeye	Hippocastanaceae	An abundant nectar source for moths and butterlies with long tongues. Bees chew through the base of the flowers to reach the nectar.
Buckthorn	Rhamnaceae	Nectar source for many small butterflies. Essential larval food for some **FLATS**, some **BRUSHFEET** and one **BLUE.**

Threats

There is evidence that some populations of pollinators are diminishing. The biggest threats are loss of habitat and use of pesticides. Development of natural areas into urban communities disrupts feeding and nesting needs of many insects. Use of pesticides is common with homeowners and commercial landscapers.

Metallic Wood Borer
(Psiloptera drummondi)

Beetles

There are more beetles than any other type of animal in the world. In evolutionary terms, beetles may have been the earliest pollinators. Most beetles are predators, not pollinators. But some members of a few beetle families do visit flowers and feed on pollen, including Metallic Wood-Boring Beetles, Soldier Beetles, and Long-Horned Beetles. Beetles are clumsy fliers. They usually prefer flower clusters, where they climb from blossom to blossom. Many beetles seem to be attracted to flowers that have unpleasant odors.

Black-and-yellow Soldier Fly
(Odotomyia truquii)

Flies

There are hundreds of fly species in Travis County, and many are important pollinators. Flies come in different shapes, sizes and colors. Flies have mouth parts that extend deep into flowers, where they can reach pollen and nectar. Some flies look a lot like bees, but they only have one set of wings instead of two. Some flies are fast. They can hover over a flower, then dart in for a quick drink of nectar. A slower fly will be more effective in pollination. Like beetles, some flies are attracted to flowers that smell like rotting meat.

What You Can Do

Begin by creating a diverse landscape of native plants favored by local pollinators. Also, try to reduce the amount of pesticides used around your home. If you need to use pesticides, choose an organic product and pay attention to when and how you apply it. Once you have a pollinator-friendly yard, venture out and encourage local schools to plant native gardens.

THICKETS and VINES

SIGN 16.1

Thickets and vines provide butterflies an escape from rain, a shady spot from a too-hot sun, and a place to hide from some of their predators. On a gusty day, well placed thickets and vines block the wind, saving energy butterflies would need to fight the breezes. However, when butterflies fly into a thicket, bumping into close-knit branches can cause scratches, nicks and tears on their wings. Thickets cause more damage to butterflies than any other habitat.

Garden Design

In addition to providing for needs of butterflies, thickets act as a visual screen along trails, thus enhancing the experience of quiet observation. A thicket has the advantage of providing sheltered structure for butterflies but not creating too much shade. Also, when butterflies perch on top of shrubs and small trees, they will be more visible to visitors. Approximately twenty-two different shrubs and small trees create these thickets, as well as a diversity of wildflowers and mid-sized grasses.

Hanging Out in the Thicket

Male butterflies like to perch up high on the tops of a thicket's shrubs and trees, waiting for females who might fly by looking for a mate. But on a scorching summer afternoon, even butterflies can get too hot! When their bodies exceed their optimal temperature, they go for the shade inside the thicket.

What You Can Do At Home

Thickets can be useful along a property line or where you would like to visually block something like a garbage area or a utility box. You can create a relatively tall or short thicket, depending on the shrubs and small trees you select. If you use a diversity of plants that naturally grow together, there will be an assortment of textures, shapes and bloom times.

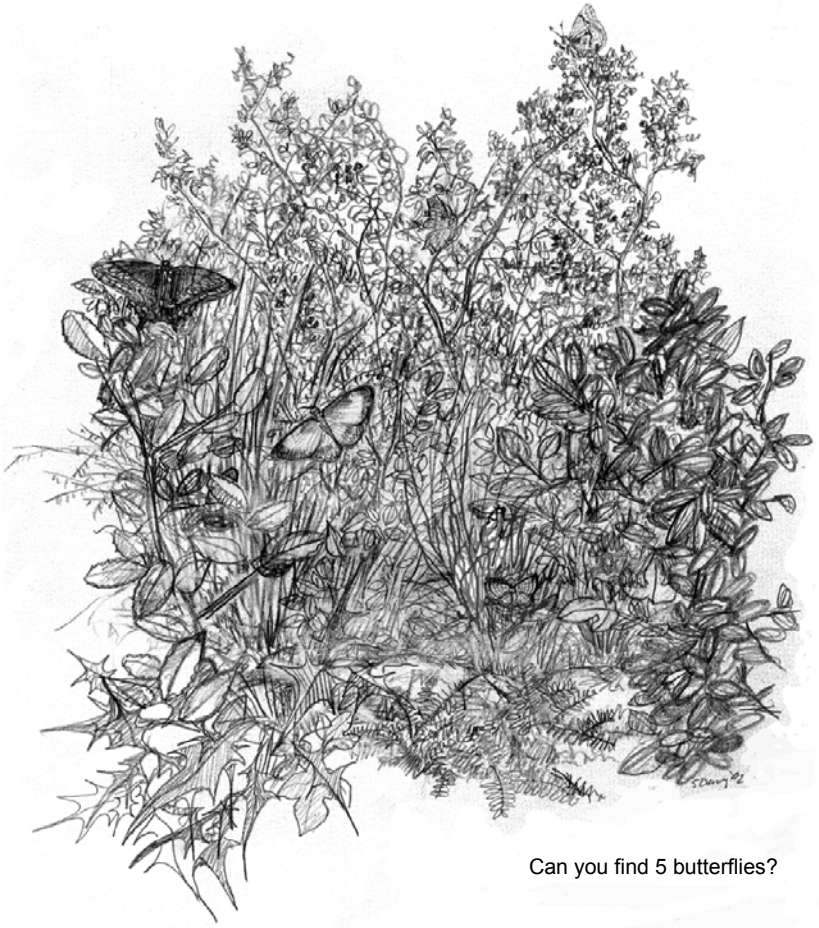
Common Butterfly Name	Common Family Name
Green Skipper	Branded Skippers
Guadeloupe Fatal Metalmark	Metalmarks
Gulf Ceraunus Blue	Hairstreaks, Coppers, Blues
Interior Dun Skipper	Branded Skippers
Iowa Skipper	Branded Skippers
Julia's Skipper	Branded Skippers
Kendall's Western Yucca Skipper	Branded Skippers
Lacey's Hairstreak	Hairstreaks, Coppers, Blues
Lisa Little Sulphur	Whites, Sulphurs
Lost Metalmark	Metalmarks
Marine Blue	Hairstreaks, Coppers, Blues
Mexican Leaf Butterfly	Emperors
Mexican Pearl Crescent	Peacocks, Tortoiseshells, Fritillaries
Mexican Zebra	Peacocks, Tortoiseshells, Fritillaries
Monarch	Milkweed Butterflies
North American Painted Lady	Peacocks, Tortoiseshells, Fritillaries
Northern Cloudywing	Flats
Northern Falcate orangetip	Whites, Sulphurs
Northern Hackberry Butterfly	Emperors
Northern Mesquite Blue	Hairstreaks, Coppers, Blues
Ocola Skipper	Branded Skippers
Orange Skipperling	Branded Skippers
Orange Sulphur	Whites, Sulphurs
Pale Yellow Leaf	Whites, Sulphurs
Pallid Queen	Milkweed Butterflies
Phaon Crescent	Peacocks, Tortoiseshells, Fritillaries
Plains Black Swallowtail	Swallowtails
Plains Gray Hairstreak	Hairstreaks, Coppers, Blues
Plains Viceroy	White Admirals, Sailors, Daggerwings
Poison Ivy Hairstreak	Hairstreaks, Coppers, Blues
Rawson's Metalmark	Metalmarks
Sachem	Branded Skippers
Silver Crescent	Peacocks, Tortoiseshells, Fritillaries
Silver Flash	Flats
Sleepy Orange	Whites, Sulphurs
Sooty Elfin	Hairstreaks, Coppers, Blues
Southern Broken Dash	Branded Skippers
Southern Cedar Hairstreak	Hairstreaks, Coppers, Blues
Southern Skipperling	Branded Skippers
Southern Sootywing	Flats
Southwestern Snout	Snouts
Spicebush Swallowtail	Swallowtails
Texas Blue-Eyed Grayling	Browns, Ringlets
Texas Crescent	Peacocks, Tortoiseshells, Fritillaries
Texas Hairstreak	Hairstreaks, Coppers, Blues
Texas Powdered Skipper	Flats
Texas Tailed Blue	Hairstreaks, Coppers, Blues
Texas Tawny Empress	Emperors
Tropical Cloudless Sulphur	Whites, Sulphurs
Two-Tailed Tiger Swallowtail	Swallowtails
Variegated Fritillary	Peacocks, Tortoiseshells, Fritillaries
Vesta Crescent	Peacocks, Tortoiseshells, Fritillaries
Violet Tip Question Mark	Peacocks, Tortoiseshells, Fritillaries
Western Gulf Fritillary	Peacocks, Tortoiseshells, Fritillaries
Western Pygmy Blue	Hairstreaks, Coppers, Blues
Whirlabout	Branded Skippers

INDEX OF
COMMON BUTTERFLY NAMES

Look up the common butterfly name to find its common family name. The ten butterfly families in the "Common Butterflies and Their Seasonal Occurrence" (p.29) are listed in the following scientific order:

Flats
Branded Skippers
Metalmarks
Hairstreaks, Coppers, Blues
Swallowtails
Snouts
Milkweed Butterflies
Browns, Ringlets
Emperors
Peacocks, Tortoiseshells, Fritillaries
White Admirals, Sailors, Daggerwings
Whites, Sulphurs

Common Butterfly Name	Common Family Name
American Leaf Butterfly	Emperors
American Red Admiral	Peacocks, Tortoiseshells, Fritillaries
Amymone Handkerchief	White Admirals, Sailors, Daggerwings
Antonia Hackberry Butterfly	Emperors
Arizona Orangetip Admiral	White Admirals, Sailors, Daggerwings
Blue Hairstreak	Hairstreaks, Coppers, Blues
Blue Swallowtail	Swallowtails
Boll's Theona Checkerspot	Peacocks, Tortoiseshells, Fritillaries
Bordered Lacinia Patch	Peacocks, Tortoiseshells, Fritillaries
Brown Duskywing	Flats
Canna Skipper	Branded Skippers
Carolina Ringlet	Browns, Ringlets
Celia's Wayside Skipper	Branded Skippers
Checkered White	Whites, Sulphurs
Clouded Skipper	Branded Skippers
Common Buckeye	Peacocks, Tortoiseshells, Fritillaries
Common Checkered Skipper	Flats
Common Flambeau	Peacocks, Tortoiseshells, Fritillaries
Common Sootywing	Flats
Common Streaky Skipper	Flats
Common Wood Ringlet	Browns, Ringlets
Cosmopolitan Painted Lady	Peacocks, Tortoiseshells, Fritillaries
Dainty Sulphur	Whites, Sulphurs
Delaware Skipper	Branded Skippers
Desert Checkered Skipper	Flats
Eastern Red-Spotted Admiral	White Admirals, Sailors, Daggerwings
Eastern Snout	Snouts
Eastern Tiger Swallowtail	Swallowtails
Eufala Skipper	Branded Skippers
Fiery Skipper	Branded Skippers
Funeral Duskywing	Flats
Giant Swallowtail	Swallowtails
Great Blue Hairstreak	Hairstreaks, Coppers, Blues



Can you find 5 butterflies?

What's the Attraction to Thickets?

Butterflies are attracted to forest canopies. Thickets are like a forest canopy brought down to eye level, and butterfly behavior is the same in a thicket as in a tall forest. Thickets contain shrubs that are more tightly branched than trees, which creates a dense patchwork and lots of places for small insects to hide and escape from predators.

When chased into a thicket by a predator, butterflies wait for a visual indication that the predator has not followed before coming back out into the open. But there could be possible danger within the thicket, too, since birds also like to poke around in shrubbery. When birds snap at butterflies, they leave beak marks in their wings. Scientists can measure these marks and figure out which birds made the bite.

PUDDLING PLACE

SIGN 16.2

Butterflies need puddles and moist areas as their source of water and nutrients. Butterflies often gather in numbers of mixed species at puddling sites. They are almost always male and there is a lot of social interaction between individuals, who jostle with each other for the best positions and chase each other away. While butterflies focus on drinking, predators can easily snatch them up.

Garden Design

Puddling Place was created to look like a natural limestone seep. Drip irrigation provides enough water for a shallow puddle on rocks and a moistening of surrounding soil. Periodically, small amounts of manure will be spread on wet soil to supplement nutrients needed by butterflies. Approximately six species of moisture-loving grasses and wildflowers are planted in this puddling area. The planting around the rock seep is designed to leave enough space for butterflies to land and take-off while watching for predators.

Life in the Big Muhly

There is much activity in the big muhly, the tall grass surrounding the puddling place. Often an adult male skipper will perch on top of the grass and chase other males away. He's watching for a female, who will fly close to the ground. After mating, the female will crawl into the big muhly's dense foliage and deposit eggs near the protected base of the stem. The caterpillars will come out at night and feed on the ends of the grass stalks and then retreat during daylight. The caterpillar will soon become a chrysalis in the grass clump.

What You Can Do At Home

Having a puddling spot is essential for a butterfly garden. If you can't build one with a drip irrigation system, find a rock with depressions or holes where water can pool. Water the rock until it's moist and full of little pools. Mosquitoes might lay eggs in the water. But since it takes about seven days for them to become adult, by emptying the rock and starting over you won't have mosquito problems. Place your puddling rock in a relatively open area, where butterflies will get sun and have a nearby hideout.

Butterflies not drawn to scale

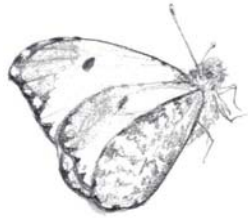
Variegated Fritillary

Western Gulf Fritillary

Mexican Zebra

Plains Viceroy

Arizona Orangetip Admiral



Northern Falcate Orangetip

Sleepy Orange

Lisa Little Sulphur

Dainty Sulphur

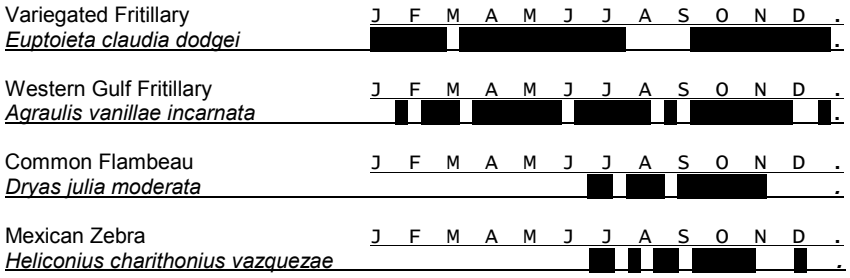
Orange Sulphur

Variegated Fritillary
Euptoieta claudia dodgei

Western Gulf Fritillary
Agraulis vanillae incarnata

Common Flambeau
Dryas julia moderata

Mexican Zebra
Heliconius charithonius vazquezae



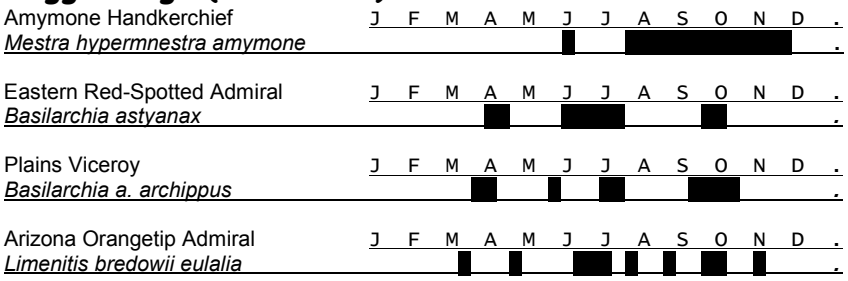
White Admirals, Sailors, Daggerwings (Biblidiidae)

Amymone Handkerchief
Mestra hypermnestra amymone

Eastern Red-Spotted Admiral
Basilarchia astyanax

Plains Viceroy
Basilarchia a. archippus

Arizona Orangetip Admiral
Limenitis bredowii eulalia



Whites, Sulphurs (Pieridae)

Checkered White
Pontia protodice

Northern Falcate orangetip
Anthocharis midea annickae

Tropical Cloudless Sulphur
Phoebis sennae marcellina

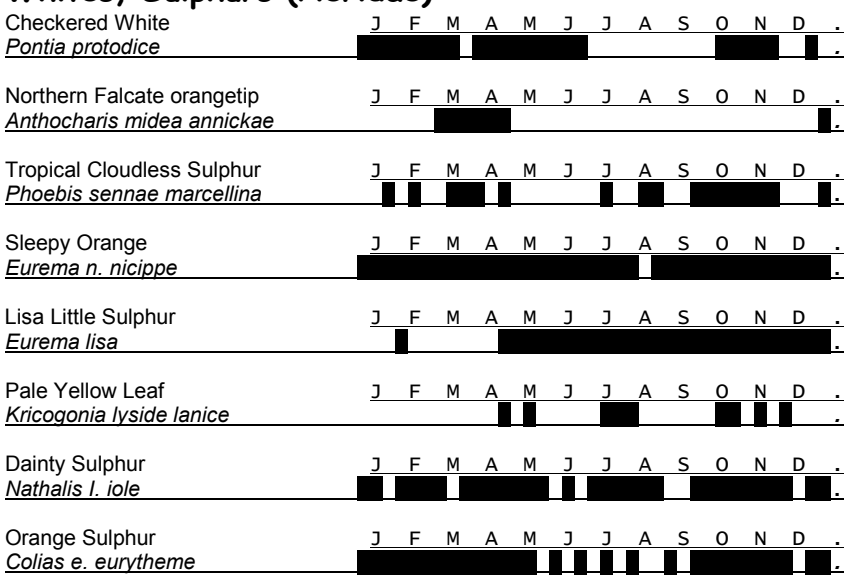
Sleepy Orange
Eurema n. nicippe

Lisa Little Sulphur
Eurema lisa

Pale Yellow Leaf
Kricogonia lyside lanice

Dainty Sulphur
Nathalis l. iole

Orange Sulphur
Colias e. eurytheme



What Is There To Drink?

Butterflies drink not only water, but salts, minerals, amino acids and protein fragments. Amino acids are needed to mature a male butterfly's sperm packet and to manufacture pheremones, or attractive scents. If you add some manure, fermenting fruit or ripe fish to the puddling place, the butterflies will be even happier.

How Do They Do It?

When butterflies and moths sit at a puddling place, you can watch them drink liquid through their tongues.

Sometimes you can watch a stream of liquid exuding from their hind end, the last step of filtering water.

Butterfly mouth parts are highly specialized, as opposed to simple insects' primitive biting and chewing mouth parts. There are two palps, like little hands, on the sides of the mouth that act like tongue guards.

Can you find 4 butterflies?

The tongue is an extension of part of another palp, which forms a tube like a drinking straw, called a proboscis. Through evolution, butterflies have lost their jaws. A few adult moths retain them. Caterpillars, of course, still have jaws.

TALL MEADOW SIGN 16.3

Tall grasses and wildflowers found in Central Texas meadows and prairies are generally the same as those found throughout eastern North America. Tall prairie plants offer good perching opportunities for butterflies. Most often found in this habitat are skippers, a butterfly family less colorful than most, which can be recognized by their erratic flight pattern.

Garden Design

Extra soil was added to the Tall Meadow to create a zone deep enough to handle the extensive roots of tall grasses and wildflowers. The dominant plants in the tall meadow are five different mid-high and tall grasses, with approximately 30 different tall wildflowers scattered throughout. The random pattern of plants mimics a wild prairie, with a mosaic of colors throughout the seasons. Trees and shrubs along the outside edges were designed as a wind block and visual screening from the roadway and other paths.

What You Can Do At Home

Not everyone will want a tall grass prairie as their front lawn. However, you could create patches of prairie or meadow as a background to a vegetable garden or as a screen where you want to block visibility. Be sure to choose a place that will get full sun. You could plant a clump of a single species or combine several together. If you create a diverse meadow, be ready for many changes over time. The plants are in competition with each other, and some are more aggressive. If you have a favorite that's not aggressive, you might have to do some thinning to keep the look you want.

Soaking Up the Sun

In cool weather, and especially in the morning, butterflies will bask on a perch with their wings wide open to the sun. This is called "thermo-regulation," as their blood warms up and stores more energy for the activities of the day.

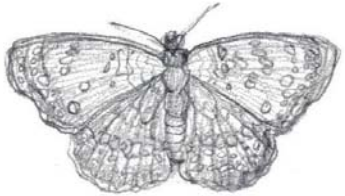
Butterflies not drawn to scale

Northern Hackberry Butterfly

American Leaf Butterfly

Common Buckeye

Bordered Lacinia Patch

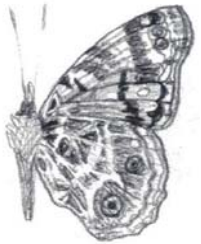


Texas Crescent

Phaon Crescent

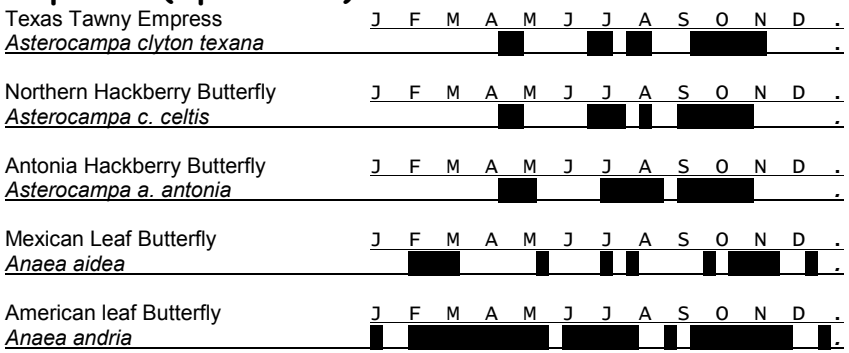
Violet Tip Question Mark

American Red Admiral

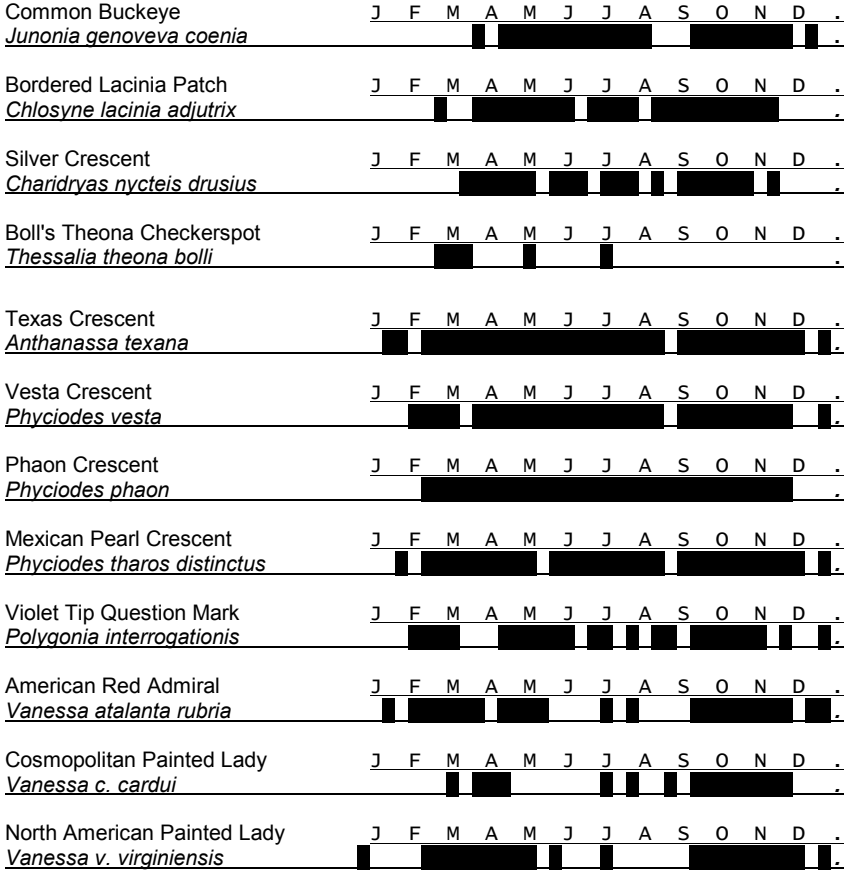


North American Painted Lady

Emperors (Apaturidae)



Peacocks, Tortoiseshells, Fritillaries (Nymphalidae)



Can you find 5 butterflies?

How Do Skippers Use the Prairie?

Grasses are the main food plant of skipper caterpillars, the most common butterfly family living in this habitat. The flower heads are used as perches by males, much like other butterflies use perches in thickets. Skippers use the grass clumps as a refuge during foul weather and a place for their eggs, caterpillars and chrysalises. Many skippers never move far from their birth meadow, except when they are blown away by strong winds. There is less diversity of butterflies in a tall grass meadow.

What About Other Butterflies?

If you are looking for butterflies other than skippers, scout around the edges where the meadow meets the shrub and tree line. Butterflies generally prefer edges of habitats, where they have more choices of plants and can easily fly to safety. Sunflowers will attract Border Patch and other Checkerspot butterflies. Many other butterflies will stop at nectar sources while passing through.

STREAMBED and SPRING

SIGN 16.4

This wet weather stream begins at the pond, and then winds through a sunny meadow before ending at a shaded spring. It collects run-off water from the carriage house roof and overflow from the pond. Butterflies are naturally predisposed to fly along linear paths such as streambeds, so they feel right at home in this area of the garden.

Garden Design

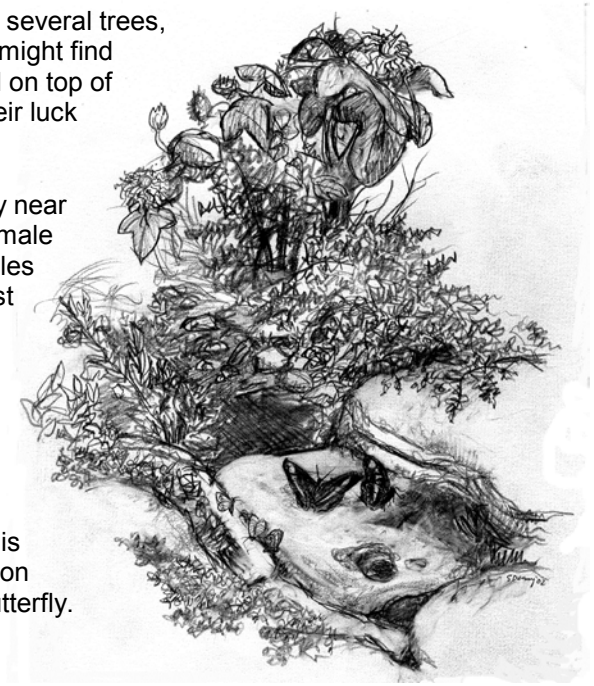
This is a very rich habitat. Plants able to handle wet and dry conditions line the edges and bottom of the streambed, including an abundance of tall grasses. The shady spring simulates a miniature limestone cliff and seep, surrounded by wetland vines, wildflowers, grasses and a willow tree. This habitat has many similar aspects of the tall grass meadow. But having a different plant make-up than the meadow, it will attract different butterflies.

The Mating Game

The spring is shaded by several trees, including a willow. You might find male butterflies perched on top of the willow tree, trying their luck waiting for a mate.

Female butterflies will fly near a male, whereupon the male competes with other males for her attention. In most species, the female determines with which male she'll mate.

In a few species, the male will hang around a female chrysalis and mate with her as soon as she emerges as a butterfly.



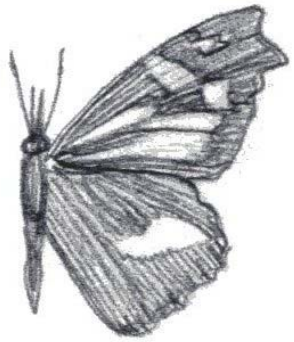
Can you find 5 butterflies?

Butterflies not drawn to scale

Blue Swallowtail

Monarch

Giant Swallowtail



Eastern Snout

Common Wood Ringlet

Common Wood Nymph

Swallowtails (Papilionidae)

Blue Swallowtail
Battus p. philenor

Two-Tailed Tiger Swallowtail
Pterourus multicaudatus

Eastern Tiger Swallowtail
Pterourus g. glaucus

Spicebush Swallowtail
Pterourus t. troilus

Giant Swallowtail
Heraclides cresphontes

Plains Black Swallowtail
Papilio polyxenes curvifascia

Snouts (Libytheidae)

Eastern Snout
Libytheana bachmanii

Southwestern Snout
Libytheana larvata

Milkweed Butterflies (Danaidae)

Monarch
Danaus p. plexippus

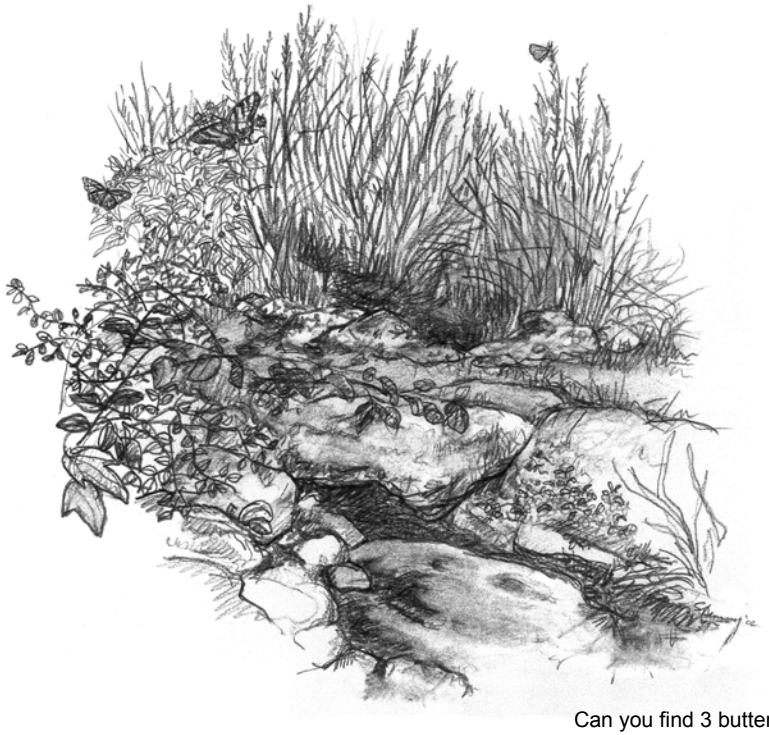
Pallid Queen
Danaus gilippus strigosus

Browns, Ringlets (Satyridae)

Carolina Ringlet
Neonympha sosybia

Common Wood Ringlet
Megisto c. cymela

Texas Blue-Eyed Grayling
Cercyonis pegala texana



Can you find 3 butterflies?

Do Butterflies Like Streams?

While butterflies have evolved to fly along the length of streams, there is much to offer them if they decide to stop along the way. During wet seasons, butterflies can drink from mud puddles available in the streambed. During dry seasons, they can always visit nearby flowering plants for nectar. Accumulations of decaying leaf litter along the streambed offer high amounts of nutrients for butterflies through all seasons.

What You Can Do At Home

If you have a natural water gathering swale or low spot in your yard, you might want to try some of the streambed plants. Since these plants will get extra moisture during wet seasons, they will tend to be tall. If you can place a few large rocks in your swale, the soil underneath the rocks will stay damp longer than the soil in the open. Then right by the rocks you can plant species that need a little extra moisture. Rock can also provide an interesting foreground to the taller plants behind.

ECLOSION BOX

SIGNS 16.5 and 16.11

Advantage to Complete Metamorphosis

Butterflies have four stages of growth. The main difference between butterflies and simple insects is the chrysalis (pupa), a growth stage between larva (caterpillar) and adult (imago). Seeming lifeless, the chrysalis is undergoing an amazing change. Caterpillars rearrange completely into an adult butterfly. The advantage to this complex process is that caterpillars live a different life from adults and therefore they do not compete with each other.

Simple Insects:Three Stages

Simple insects have three growth stages: egg, nymph, adult. Nymphs look similar to adults, but are smaller and don't have wings. Nymphs molt several times before developing into adult size. Simple insects include dragonflies, true bugs, grasshoppers, and cockroaches.

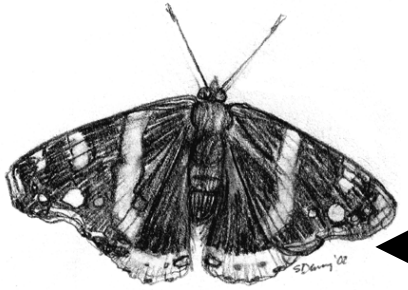
The Four Stages of

Complete Metamorphosis of the

Egg (Ovum)

The size of a pin head.

The female fertilizes each egg as it is laid, using sperm from the packet given her by the male during mating.



A fully grown adult butterfly emerges from the chrysalis. The wings are crumpled at first, then are inflated to full size and hardened.

Adult Butterfly (Imago)

Adults only live a short time. They cannot chew. They drink through their straw-like proboscis. Activities include eating, flying, mating, reproducing.

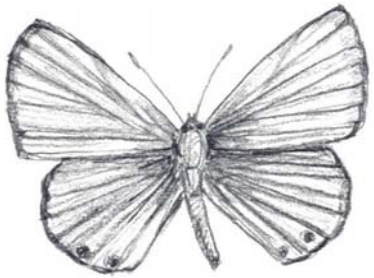
Butterflies not drawn to scale

Rawson's Metalmark

Great Blue Hairstreak

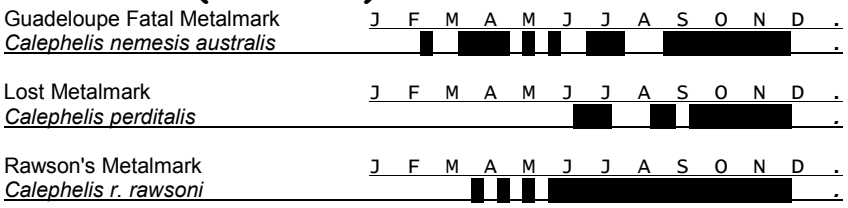
Blue Hairstreak

Poison Ivy Hairstreak

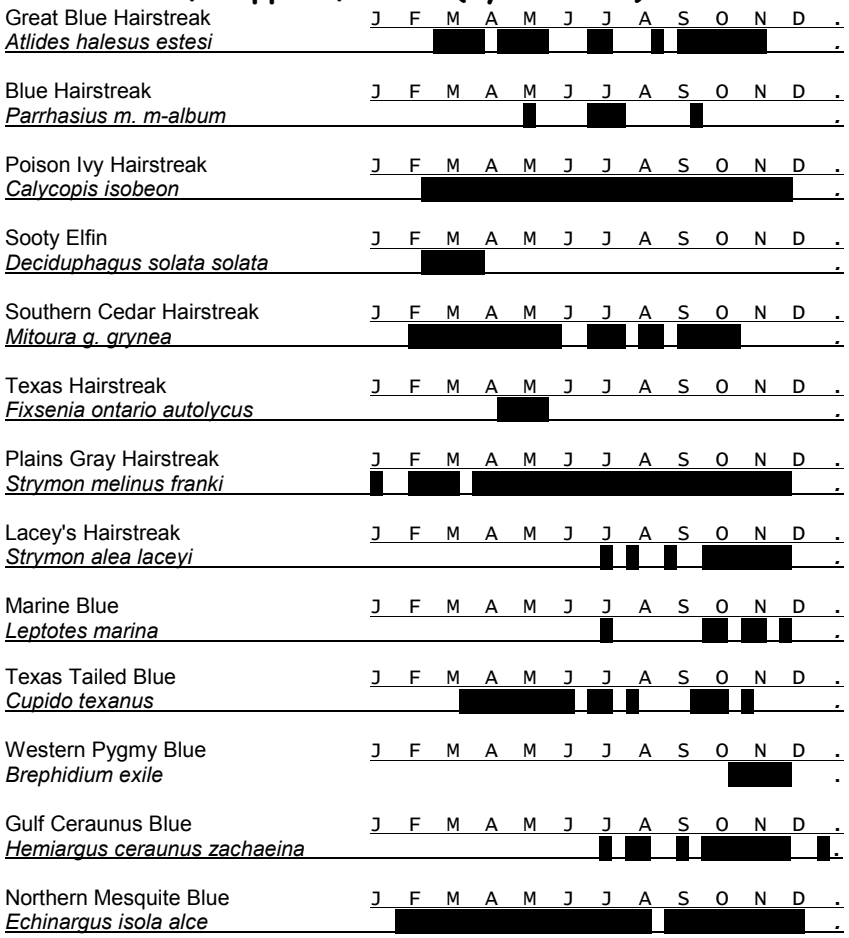


Northern Mesquite Blue

Metalmarks (Riodinidae)



Hairstreaks, Coppers, Blues (Lycaenidae)



What is an Eclosion Box?

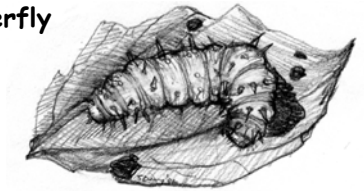
An eclosion box is a safe place for a butterfly to emerge from its chrysalis, away from predators and parasites, but accessible for public viewing. The screening allows for needed air circulation. Inside panels can be taken to the Insectary when necessary for cleaning or mounting new chrysalises. The top can be propped open so newly emerged butterflies can fly out when ready.

Know Your Enemies

Major predators of butterfly pupae are birds, especially blue jays. Parasitic wasps and flies, another common threat, lay their eggs inside butterfly pupa. Wasp eggs eat their way out of the chrysalis as they mature, which is deadly to the chrysalis. Bats and spiders also eat butterfly larva

Butterfly Growth

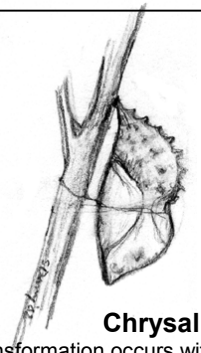
Red Admiral Butterfly



Caterpillar (Larva)

The caterpillar eats, eats, eats and eats. It outgrows and shed its skin about four times.

The caterpillar attaches itself upside-down to a twig or leaf and forms a hard chrysalis.



Chrysalis (Pupa)

An amazing transformation occurs within the pupal shell. The caterpillar organs break down and are completely rearranged as the adult.

ROCKY KNOLL SIGN 16.6

The Rocky Knoll is a place where arid, dry land plants live with insects and animals they attract. Cactus flowers found in this desert-like habitat have color, scent, pollen and nectar to attract a wide variety of pollinators. Along with cacti, yuccas, short grasses and low-growing wildflowers, a subtle diversity is created in this area.

Garden Design

This dry habitat was created to mimic areas that have thin soil conditions and where bedrock often is visible at the surface. Since there is very little soil depth, plants that grow in these conditions have shallow root systems. Sometimes there are natural cracks in limestone bedrock, which allow a few larger, deeper rooted plants to flourish. All of the plants in the Rocky Knoll are drought tolerant because any rainwater falling here will not gather and linger as in some habitat types, but will quickly flow out and away from the underlying bedrock. The plants in Rocky Knoll include five different species of cactus and three yuccas.

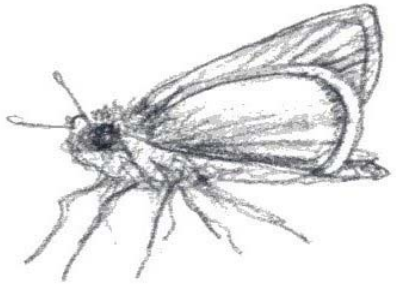
What You Can Do At Home

Growing cactus is an acquired taste, but nothing gives a traditional feel of Texas quite like an assortment of cacti and yuccas. You can choose from the large dramatic prickly pears and tall yuccas to the delicate but well-armed little cacti that sometimes go unnoticed unless they are blooming. Building up the soil to create a small hill gives you the opportunity to arrange cacti and rocks in a complementary way while providing necessary drainage.

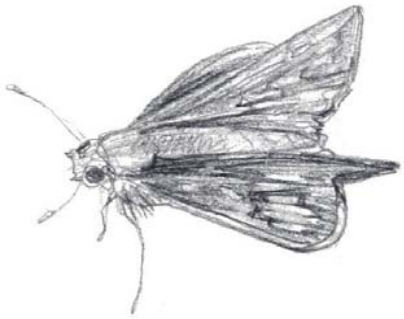
King of the Mountain

Many male butterflies like to "hilltop," by claiming a perch on the summit of a hill. Swallowtails, in particular, like to find a nice rock to sit on and then spend time defending it. Hilltops also tend to attract perching birds. While birds can be a danger, bird droppings will increase the amount of nitrogen available to feeding butterflies.

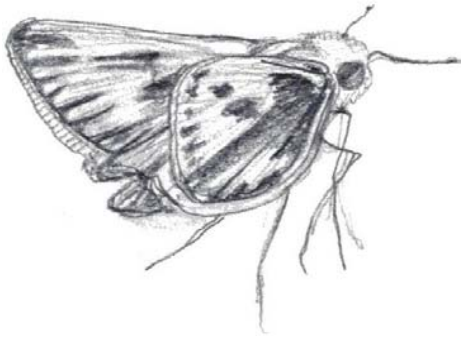
Butterflies not drawn to scale



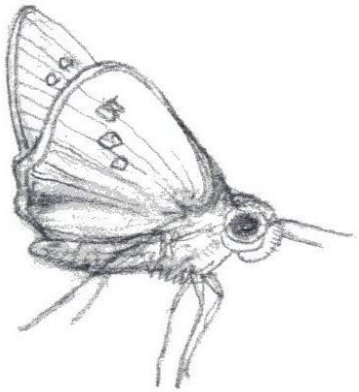
Southern Skipperling



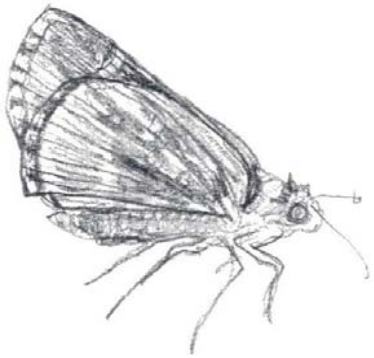
Sachem



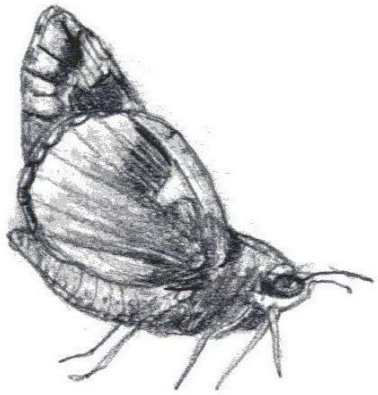
Fiery Skipper



Canna Skipper

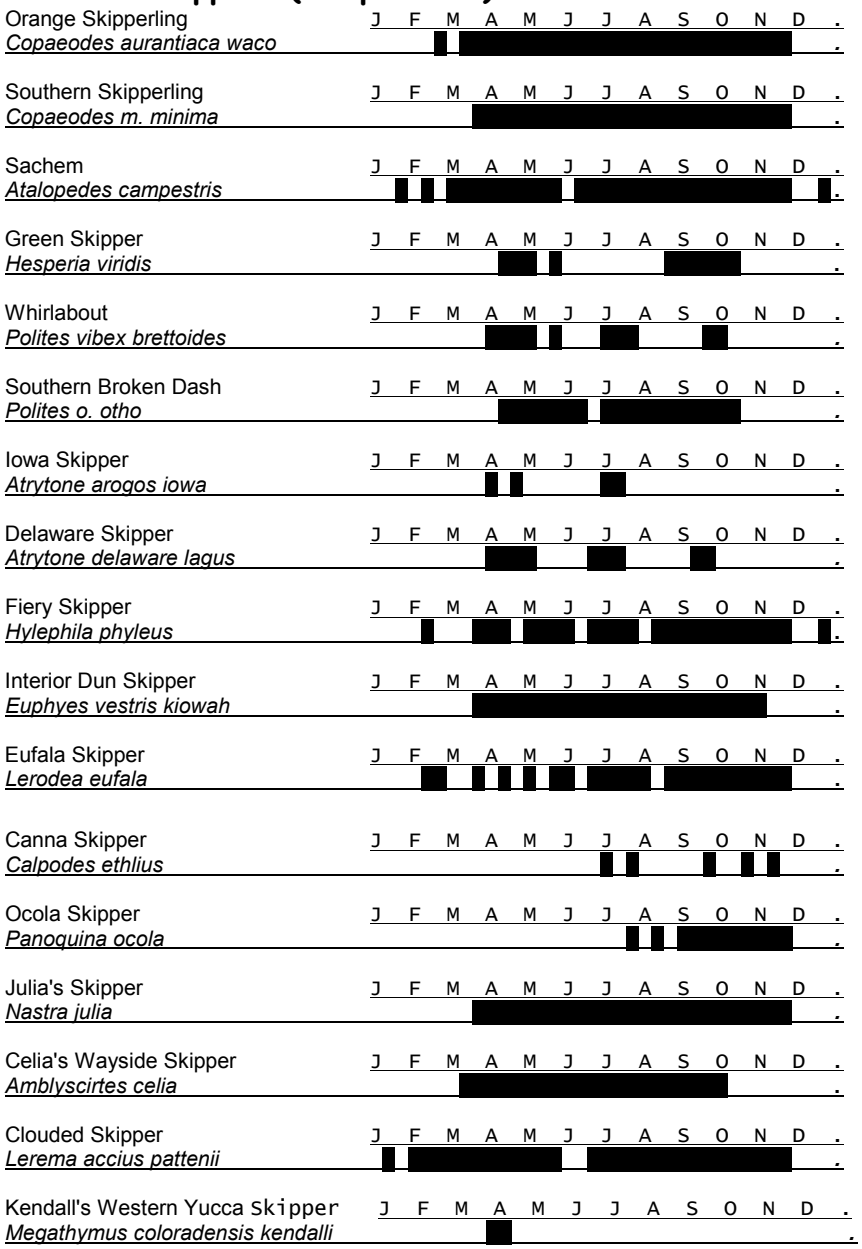


Clouded Skipper



Kendall's Western Yucca Skipper

Branded Skippers (Hesperiidae)

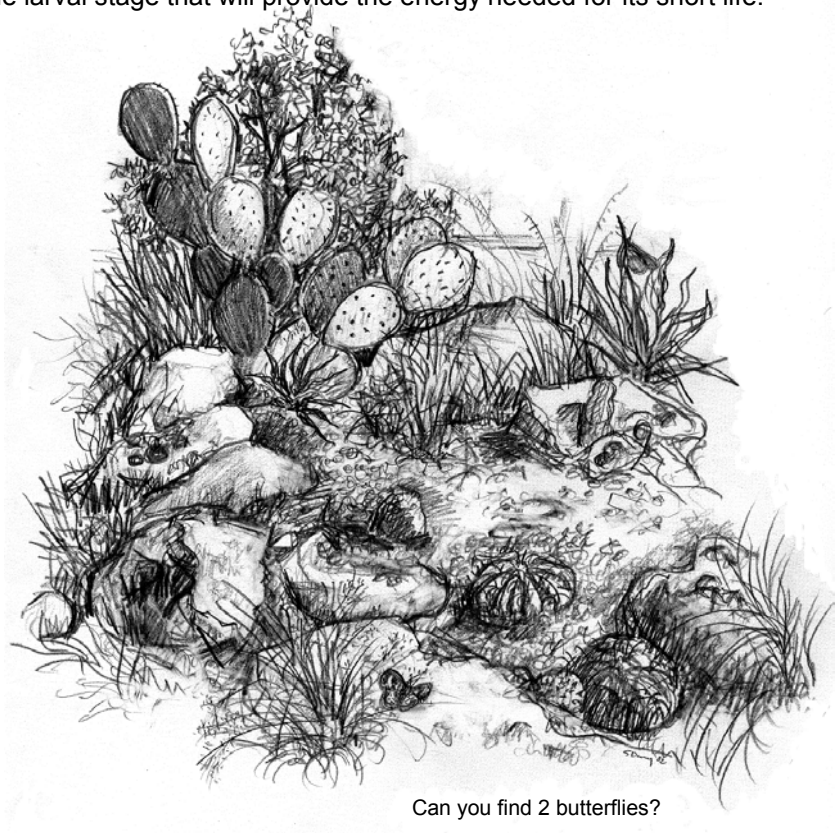


Can a Yucca Moth Live Without Yucca?

Yuccas have a special relationship with yucca moths. Yuccas need these moths for pollination and the moths need yucca seeds as food for its young. In a drought year, when yuccas conserve energy and don't usually produce seeds, they always manage to develop a few for the moths. It is thought that if either the yucca or the yucca moth became extinct, the other would soon follow. Do the night lights in an urban setting distract the yucca moth from its pollination duties? If the moths can't pollinate properly, how will this affect our yuccas?

Flying Brown Bullets

Yucca skippers, who are fast fliers, are hardly seen. They mate only once a year, after which the female lays eggs on a yucca leaf. The caterpillar feeds by boring into the yucca root and stem. There it will pupate. During cooler weather, it will wriggle lower or higher in its tunnel to take advantage of the sun-warmed stem and insulated root. The butterfly emerges within a few days. Its tongue is very short, since it does not need to feed as an adult. It has a lot of fat accumulated from the larval stage that will provide the energy needed for its short life.



Can you find 2 butterflies?

POND and MARSH

SIGN 16.7

There is much activity to look for in a pond. Tall stalks make good lookout perches. Floating leaves offer aquatic animals a place to hide from predators and the sun. Algae and bottom muck provide food rich in nutrients. Plants in the marsh edge create shady, moist zones. Spend some time observing what's going on under the floating leaves.

Garden Design

Over twenty-five species of wetland plants native to the Hill Country and east Central Texas were installed in the pond and marsh habitat. Taller plants were placed to create visitors' views of the water surface from different angles. The marsh varies from 2 inches to 2 feet wide and includes shrubs, wildflowers, grasses, sedges and rushes. Plants growing in water, with either submerged or floating leaves, are host to bacteria which filter and clean the water.

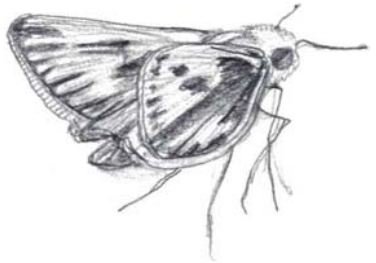
Pond Design

The pond is lined with steel-reinforced cement. Over half the pond is composed of marsh area, which creates planting space and habitat for animals. Piped-in water travels through a re-circulating pump, with just enough water added daily to offset evaporation and transpiration (water escaping through plant leaves).

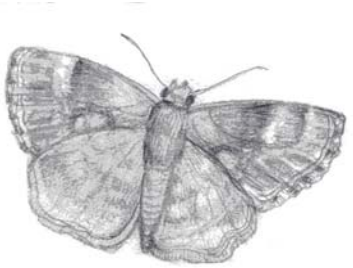
What You Can Do At Home

Creating a pond, like the one in this garden, costs money. With a small budget you can fashion a temporary pond by sinking a plastic swimming pool, plastic liner or large metal tank into the ground. Let water overflow a bit to create a marsh area around the pond for planting native wetland plants. Submersible plants can be planted in pots placed in the water. You may want some type of re-circulating pump to keep water fresh. Be sure to put minnows in the water to eliminate any chance of mosquitoes.

Butterflies not drawn to scale

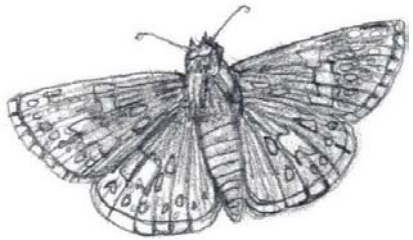


Silver Flash

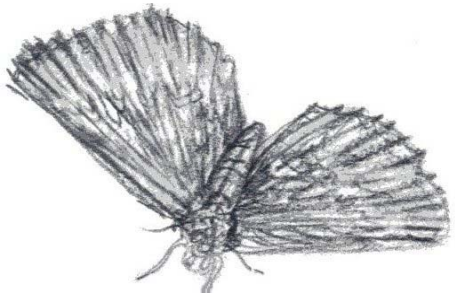


Texas Powdered Skipper

Brown Duskywing



Common Checkered Skipper



Common Streaky Skipper

Common Sootywing

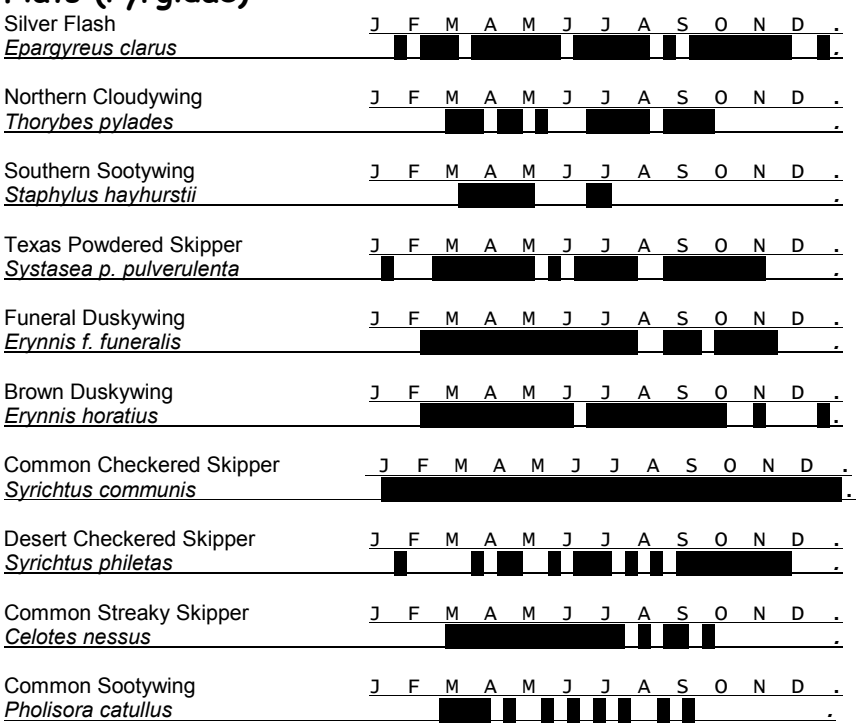
COMMON BUTTERFLIES AND THEIR SEASONAL OCCURRENCE

This is a list of the 90 most common butterflies found in the Lady Bird Johnson Wildflower Center area. It is divided into families and includes a calendar. There is a common name index at the end of this list identifying the families.

The shaded intervals indicate the times when each species has been sighted in Travis County. Many species have low numbers in spring and build up their population over the summer. They may be abundant in fall after the migratory bird predators have flown south.

Scientists arrange butterfly families roughly from the more primitive to the more specialized butterfly groups. Continuing research in Travis County on butterfly phenology, or the study of natural patterns, will provide additional information on when you can expect to see different butterflies.

Flats (Pyrgidae)



Will Butterflies Use the Pond?

While there are no aquatic butterflies in our area, there are a few aquatic moths whose larvae bore into stems of aquatic plants and survive in the air chambers. Butterflies will come to feed on nectar of wetland flowers and decaying matter floating on water or at the pond's edge. Bird droppings left on leaves are a good source of nitrogen for butterflies.

Can you find 3 butterflies, 1 dragonfly and leaves chewed by caterpillars?

Rock Around the Pond

Rocks are used in many ways by butterflies and other insects. Some butterflies, including roadside skippers, will seek refuge under the waterfall's rock ledge, where it is humid and shaded. Damp rocks can be a place to drink up moisture. Cracks between rocks are a perfect hiding spot for non-flying insects.

What About Other Insects and Animals?

Dragonflies, whose larvae are aquatic, are frequent visitors to ponds. The adults are major predators of butterflies. While in flight, they will snatch up a butterfly and hold the body while snipping off its wings. Butterflies will often be so focused on feeding at the pond they will not be aware of surrounding dangers. Spend time examining the pond. You might find a number of other animals, including tadpoles and frogs, fish, insect larvae and snakes.

WOODLAND EDGE SIGN 16.8

Woodland Edge is a meeting of two worlds, where the shaded mystery of woods and the wide-open, grassy, wildflower meadows come together in a unique and special area. The folded down canopy exposes a shrubby edge composed of plants growing under woodland trees. Butterflies are attracted to these edges. Hanging out in woodland edges allows them to visit open meadows while staying close to the protection of the woods.

Garden Design

The woodland edge is lush and green, with vines and shade-tolerant shrubs, flowers, grasses and vines. The area is mostly shady, except for short portions of the day when the sun is at just the right angle. Along the path, there are short groundcover species, with taller plants behind, leading up to vines and trees in the back.

What You Can Do At Home

Many yards have only lawn and trees, without a mid-layer growing under the trees. You can create an edge by planting a diversity of shade tolerant shrubs, flowers and grasses underneath and around large trees in your yard. The edge makes a nice transition from a lawn to a shaded woody area. Many of the shade plants will stay green through the winter, and the variety of foliage adds an interesting touch to any garden.

Hiding and Feeding

The woodland edge offers a variety of feeding and hiding spots for butterflies. Vines can be larval food plants or nectar sources. Shaded woodland grasses are favored by some of the Satyrs and a few of the Skippers. There is one Hairstreak caterpillar that feeds on dead leaves and is usually found where there is poison ivy. Many other butterflies will simply use the woodland edge as a refuge from predators or from wind and rain.

Which Butterflies Visit Springs?

Butterflies that come to the woodland spring will be those that prefer the canopy of the woodland. The spring is an attractant that will draw them down from the canopy, which will happen more often in hot weather when butterflies are looking for a cooler place. They are drawn to the water and anything decaying in water. Woodland butterflies are widely distributed in forests. They are usually high in the canopy so we almost never see them unless they are lured down lower.

Can you find 6 butterflies?

Nocturnal Visitors

The woodland spring will be even more active at night, attracting night-flying moths from the woodland canopy. These nocturnal visitors will line the bank of the pool and drink water, from which they filter nutrients as it passes through their bodies.

WOODLAND SPRING

SIGN 16.12

Watch the trickling water of the simulated spring as you enjoy the intense shade the woodland provides. The Woodland Spring offers a refuge for visitors and butterflies alike. While at the spring, notice the rotting log, which attracts a lot of insect activity. Then stroll along the wet-weather streambed that now is immature, but will grow into a shaded woodland.

Garden Design

Woodland Spring and Wet Weather Woodland contain shade-tolerant plants, including trees, shrubs, vines, grasses and wildflowers.

Woodland Spring

The spring was created with carefully chosen limestone rocks arranged to hold water, provided by a drip irrigation tube. Wetland plants such as fern, vines and liverworts surround the spring. A log has been placed where it will get continual moisture to aid in the decomposition process. Hollow logs offer a refuge to butterflies in rough weather, as well as water rich with decaying organic matter to drink.

Wet Weather Woodland

The area between the path and roadway is a wet weather swale. Plants selected for the woodland are trees, shrubs and understory plants that tolerate extra moisture during wet seasons but survive during dry seasons as well. The swale will keep this area more moist than flatter, higher woodlands.

Are Caterpillars in the Woods?

A white sheet placed on the ground over several hours will accumulate frass, the waste product dropped by caterpillars feeding in the trees above, proof that caterpillars are there. Frass looks like little alfalfa pellets and is a natural organic fertilizer for the forest.

What You Can Do At Home

A shaded puddling place gives you the opportunity to plant delicate ferns, liverworts and mosses. There are also a number of shade-loving vines that will thrive with extra water. If you create a shady nook that has extra water, vines, and a diversity of interesting shrubs and flowers, be sure to leave enough space for a comfortable chair or two since this will surely become a favorite place during the hot Texas summers.

Can you find 9 butterflies?

Scent for Survival

Butterflies will sit in sun flecks in a shaded area, where they can retreat into the obscurity of the shade if chased by a predator. The sun is important in the dispersal of pheremones, or attractive scents, which help mates find each other. In a stand of trees, pheremones from male butterflies build up. Females flying by will smell the scent as it's blown around by gentle breezes. Even a tiny whiff can lead a female to a possible mate. Since many butterflies only live one or two weeks, pheremones are needed for survival.

INSECTARY

SIGN 16.9

Insectary Design

The Insectary is a screened-in shed, with a workbench and sink. The goal is to create a safe, predator-free place for caterpillars to develop. Having four screened-in walls keeps inside temperature equal to the outside. Using strong screen with small openings keeps predators from sneaking in. The roof provides shade during summer months and protection from rain during wet seasons. Regular cleaning keeps deadly bacteria and viruses from killing caterpillars and chrysalises. Flooring is spaced for water to drain out after cleaning, but close enough so that predators can't climb up through the floorboard. Care was taken to choose wood that won't emit toxins, which would kill eggs and larvae.

How Does It Work?

The boosting program involves harvesting eggs and female butterflies in the wild and bringing them back to the Insectary, where they can safely grow into caterpillars (larvae). Caterpillars are given larval food from plants grown at the Wildflower Center or from the wild. When caterpillars enter the chrysalis (pupae) stage, they are carefully pinned onto display boards placed in the garden's eclosion boxes. What butterflies are brought to the Insectary depends entirely upon what is found when staff members go hunting. The staff raise what's available, but try to concentrate on less common species.

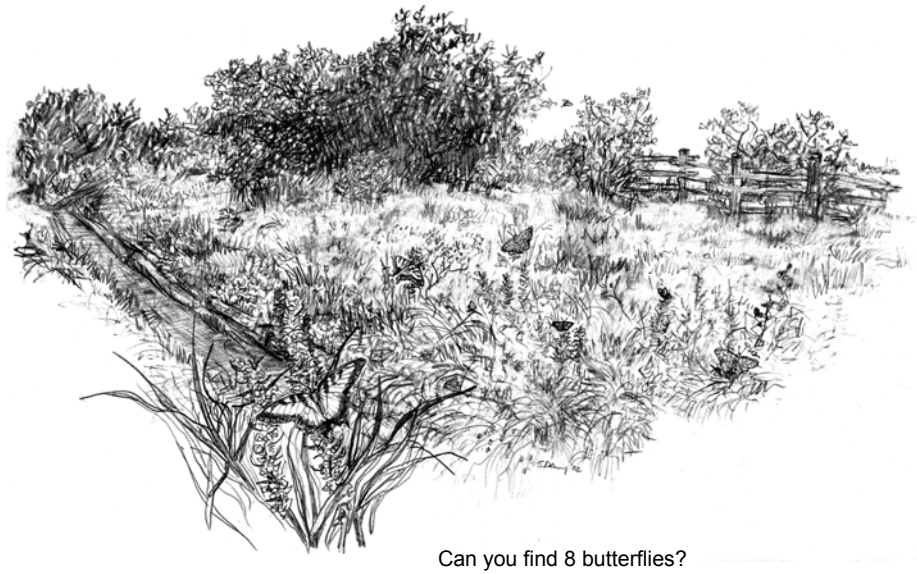
What You Can Do At Home

Watch butterflies in your garden or when you're out in a park. You might see a female laying eggs. Take the branch with the eggs back to your house. Or you can look for caterpillars. Healthy caterpillars are usually hidden in leaves. Most are active at night to avoid predators. (A caterpillar that's easy to find has probably been parasitized by a wasp. If it has been parasitized, it won't survive to the adult stage.)

Place the eggs or caterpillar in a terrarium or some other cage-type box that has plenty of ventilation. Since you don't have a complete plant, you might have to bring in more branches of the same plant for the caterpillar to eat. Keep the leaves moist by using a spray bottle of water. Then, sit back and watch the caterpillar change into a chrysalis. The chrysalis will change color when the butterfly is getting ready to emerge. Be sure to have a way for the butterfly to get out once it has emerged.

Colorful But Sensitive

Short meadows and prairies in Central Texas are predominantly composed of plants with western ranges. There tend to be more wildflowers than grasses, which provides more food plants for butterflies, and therefore a wider diversity of butterflies. When plants in a short meadow are trampled, dried from drought, or flooded, they will show more signs of stress than plants in a deep-soil, deep-rooted tall meadow. This is because they are more delicate and are sensitive to disruption.



Can you find 8 butterflies?

What You Can Do At Home

In the wild, a short meadow is very diverse and full of color. If you have space, you could turn part of a lawn area into a short meadow. Plant some native turf, such as buffalo grass, and leave some spaces where you can plant or seed the short flowers of your choice. Over time, the grass will spread and tend to out-compete the flowers, so you'll have to thin out the grass periodically. If you choose your flowers carefully, you can have color in spring and fall.

SHORT MEADOW

SIGN 16.10

Short meadows and prairies are thin-soil areas that only support plants with shallow roots. Under the spare, chalky soil is limestone bedrock, which can be found throughout the Texas Hill Country. Despite the lack of soil, this area will be full of color during blooming seasons. The wide variety of grasses and wildflowers that grow in the short meadow attract a diversity of butterflies looking for nectar.

Garden Design

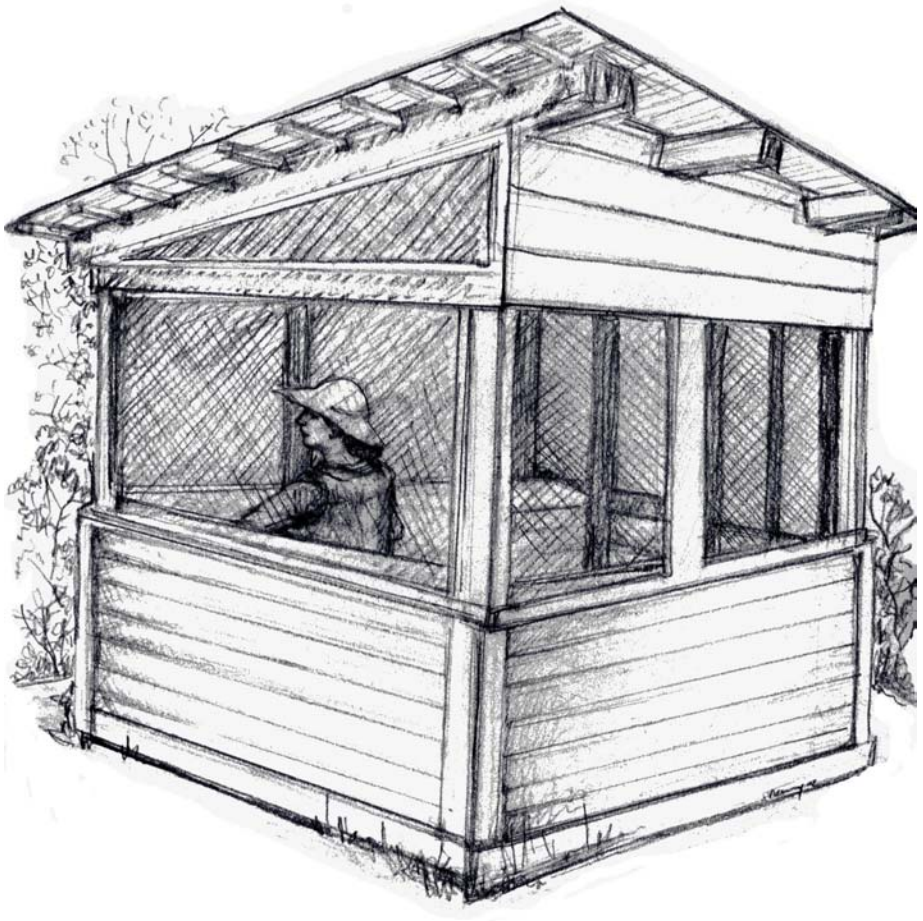
The short meadow contains over three dozen species of wildflowers and a few native grasses, the dominant one being buffalo grass. The most intense color is in spring, but a smattering of color shows up in fall. Some plants that might be considered weeds, such as western ragweed, have been left in the meadow as larval food for some of the butterflies. The fence at the edge of the meadow is a visual screening as well as a wind block. Since the growth on the fence is relatively narrow, it provides protection for the garden without giving up too much sunny space.

Tongues Tell the Tale

Short meadows have a wide variety of flower types and colors. Some blossoms are short and easy to access by insects. Others are deeper and require a little more work to reach nectar and pollen. Some butterflies have exceptionally long tongues to obtain nectar in deep throated flowers. Tongue lengths in butterflies are as diverse as flowers.

Weeds Are Welcome

There are generally more weeds in a short meadow, since spaces between plants allow for growing room. There are similarities between weeds and butterflies. They are both opportunists. A weed is a species that takes advantage of environmental disruption. It rushes into bare ground, reproduces rapidly to build up its numbers, and then disperses its seeds long distances to the next place. Due to this strategy, weeds do not need to waste energy producing poisons. They just out-reproduce animals that eat them and move on before being consumed. You can tell most vegetables started out as weeds, because they lack poisons. Butterflies use the same strategy as weeds. They rush into weedy areas where they don't have to eat poisonous plants, build up a large population quickly, and move on to the next disturbed area before predators catch on. In nature, disturbed areas include landslides, cut banks of rivers, burned forests, and wind storm blow-downs.



Benefits of Boosting

The butterfly garden is populated with butterflies that casually fly in and lay eggs on food-plants presented to them. In order to increase the number of butterflies you can see at any one time in the garden, eggs and larvae from native butterflies are periodically collected and raised inside the Insectary. The Insectary is a parasite-free environment which allows us to bring many more of the larvae to adulthood than would occur in the wild. It also allows visitors to the garden a chance to view all stages of the butterfly's life cycle.

The Ann and O.J. Weber Butterfly Garden