

Today's Butterfly Gardens

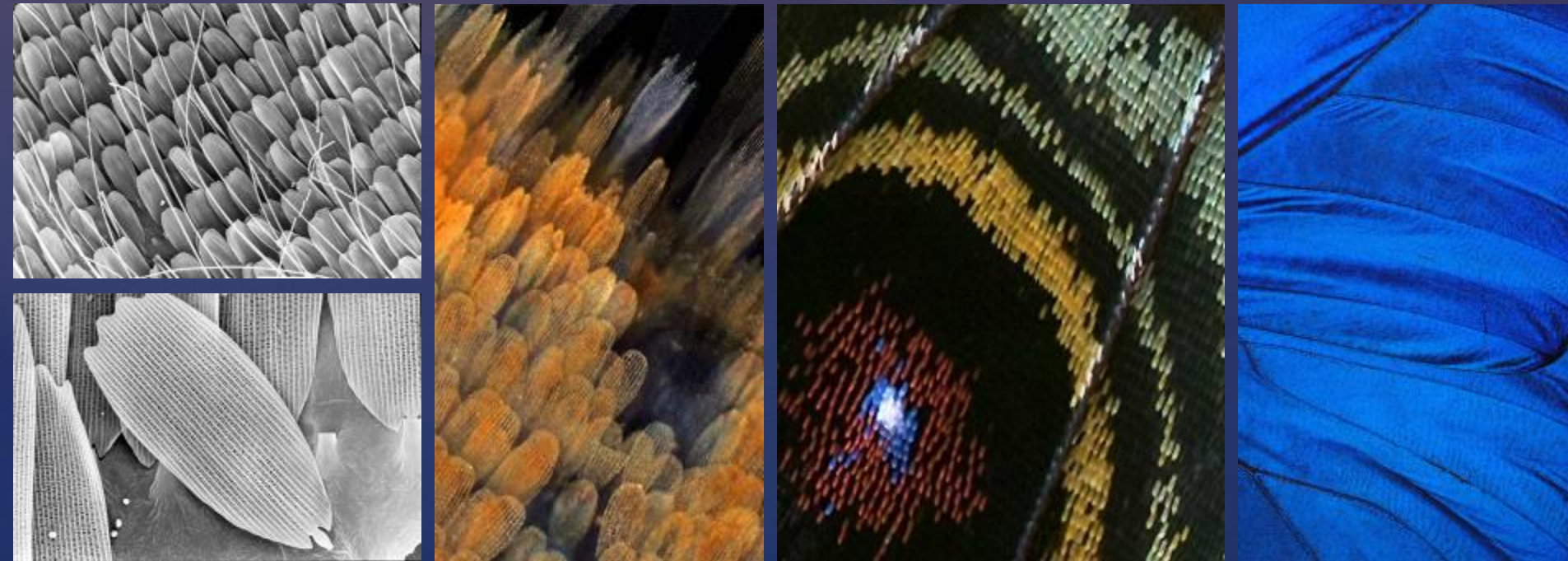


Jaret C. Daniels, Ph.D.

Butterfly Appeal

Butterflies and moths can easily be distinguished from other insects by their wings, which are covered with thousands of tiny overlapping scales, much like shingles on a roof.

Each scale is one color (contains pigments or refracts light), but collectively a butterfly's color pattern is produced by a complex mixture of differently colored scales.













Butterflies can be found everywhere!



They are approachable, easily attracted and easy to observe





Importance of Backyard Habitat





Pollinator Habitat

This area has been planted with pollinator-friendly flowers and is protected from pesticides to provide valuable habitat for bees and other pollinators.

To learn how you can help to bring back the pollinators, please visit www.xerces.org.



NATIONAL WILDLIFE FEDERATION®

Certified
WILDLIFE
Habitat™

This property provides the four basic
habitat elements needed for wildlife
to thrive: food, water, cover,
and places to raise young.



nwf.org

European Honey Bee



Mounting evidence points to substantial losses of pollinators in many regions of the globe, with the strongest evidence coming from Europe and North America.



Major Pollinators





Pollination Services

- Pollinators provide fundamental ecosystem services that enable plants to produce fruits and seeds.
- Pollinators are necessary for the reproduction of some 75% of the world's flowering plants, including more than 35% of all crop species.



Pollination Services

- Pollinators and the diverse insect communities associated with good pollinator habitat provide food for wildlife - major part of the diet of approximately 25% of all birds, many mammals
- Careful management of landscapes can greatly increase pollinator abundance and diversity



Bees are particularly important pollinators

Join the Conversation about **Native Bees**

What's the buzz?
North America has over 4,400 described species of native bees* that pollinate wildflowers and crops. From the tiny *Pedicularis* minima to the substantial carpenter bee (*Xylocopa varipunctata*), these local pollinators are hard at work in the floral landscapes of gardens, farms, forests, grasslands and urban and wild lands. Unfortunately, several species of native bees are showing disturbing signs of decline. Learn more about these colorful pollinators and how you can support them at www.pollinator.org

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

POLLINATOR PARTNERSHIP
USDA
NRCNS
NATIONAL GEOGRAPHIC
EnergyUnited
Saint Louis Zoo
Dow AgroSciences
The Scaevola Foundation
NASC
APHS
AHPA
The National Museum of Natural History

- Collect and transport pollen
- Actively forage in neighboring area around nests
- Exhibit flower constancy

Native Bees

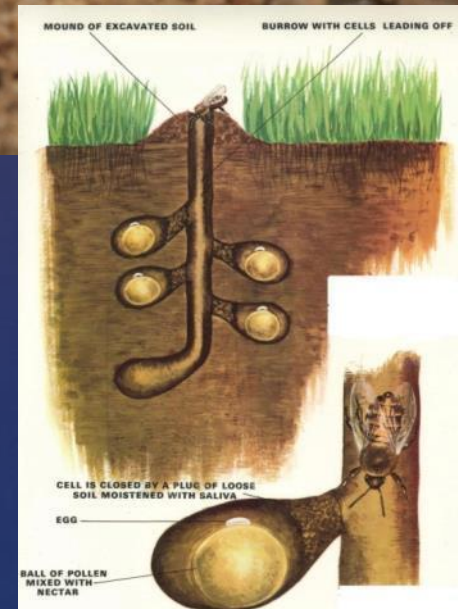


Photo: Ed Spevak



Photo: Ed Spevak

- Most native bees are solitary
- ~70% nest in the ground
- Bumble bees best known social species.



Native Bees



~ 30% nest in hollow plant stems or holes in wood





Brush piles, debris, or artificial nesting materials





GROUNDCOVERS

Shade

GRASSES

2D

3D

4D

5C

6C

11A

12A

13A

14A

15A

16A











Provide a mix of flower shapes



Provide a mix of flower colors



Include both larval host plants
and adult nectar sources





Provide flowers throughout the growing season



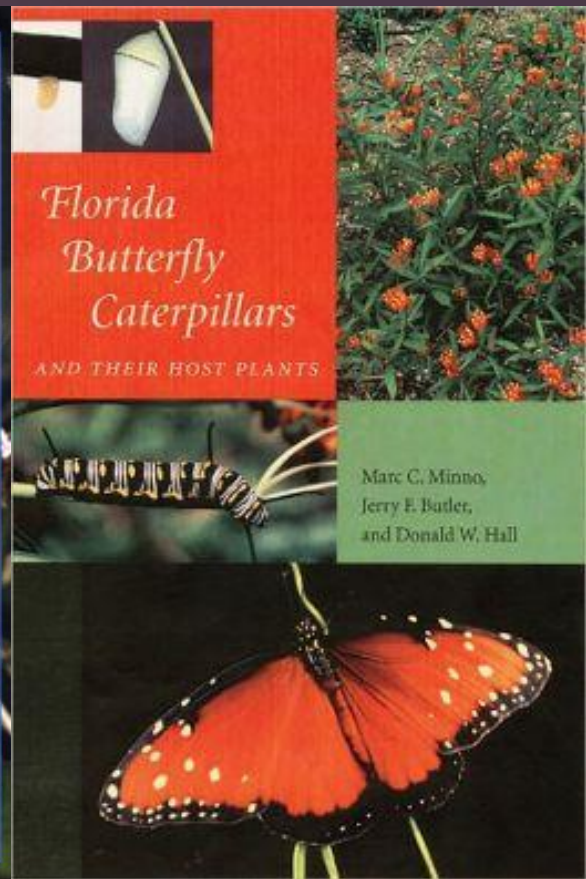
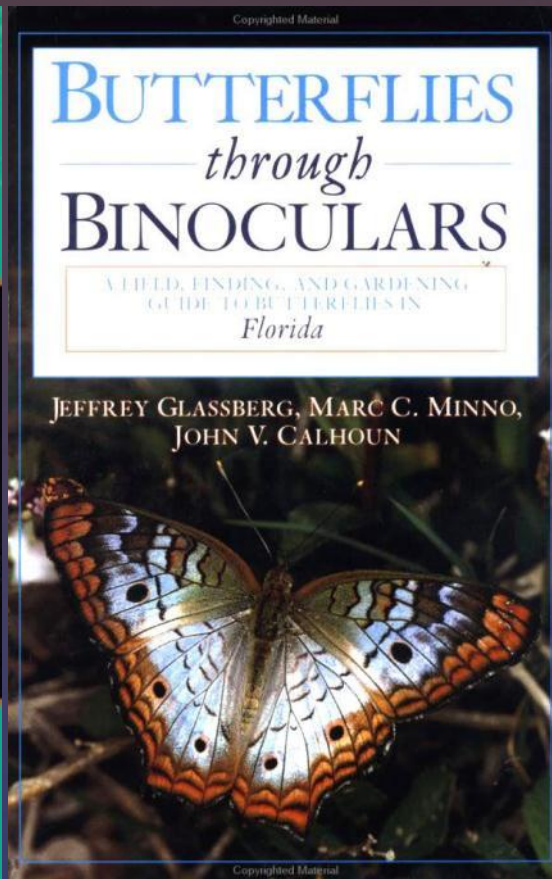
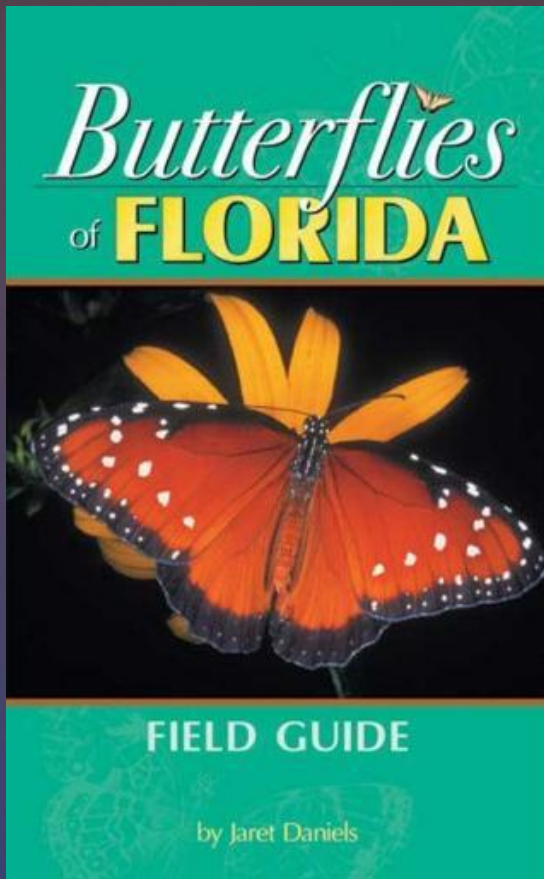
Create horizontal & vertical diversity



Plant in groupings



Chose the right plant for each location



Learn to ID the Butterflies in Your Yard

Requirements



- Provide Food
- Provide Water
- Create Cover
- Provide Nesting Sites
- Limit Pesticides



FIREBUSH

Hamelia patens

(Rubiaceae)

Summer –Fall
Woody Shrub





PURPLE PASSIONFLOWER

Passiflora incarnata
(Passifloraceae)



YELLOW PASSIONFLOWER

Passiflora lutea
(Passifloraceae)



CORKYSTEM PASSIONFLOWER

Passiflora suberosa
(Passifloraceae)





Passiflora 'Lady Margaret'



NARROWLEAF SUNFLOWER

Helianthus angustifolius

(Asteraceae)

Fall – Herbaceous Perennial





SPARKLEBERRY

Vaccinium arboreum
(Ericaceae)



CLIMBING ASTER

Symphotrichum carolinianum

(Asteraceae)

Fall – Herbaceous perennial vine





PARTRIDGE PEA

Chamaecrista fasciculata
(Fabaceae)





Extrafloral Nectaries





TRUMPET HONEYSUCKLE

Lonicera sempervirens

(Caprifoliaceae)

Spring –Fall

Evergreen Vine





GIANT HYSSOP

Agastache 'Blue Fortune'

(Lamiaceae)

Spring – Fall

Herbaceous Perennial





LANCELEAF COREOPSIS

Coreopsis lanceolata
(Asteraceae)

Spring-Summer Perennial







COASTAL SWEETPEPPERBUSH

Clethra alnifolia
(Clethraceae)

Summer - Deciduous shrub





Hercules Club

(*Zanthoxylum clava-herculis*)

(Rutaceae)

Spring – Woody Tree





GLOSSY ABELIA

Abelia x grandiflora
(Caprifoliaceae)

Spring-Fall
Evergreen Shrub

Abelia chinensis



GOLDENMANE TICKSEED

(Coreopsis basalis)

(Asteraceae)







SNOW SQUARESTEM

Melanthera nivea

(Asteraceae)

Spring – Fall

Herbaceous Perennial





REDBUD

Cercis canadensis
(Fabaceae)

Spring – Deciduous Tree





BUTTERFLYWEED

Asclepias tuberosa

(Asclepiadaceae)

Spring - Herbaceous
Perennial





PINK SWAMP MILKWEED

Asclepias incarnata

(Asclepiadaceae)

Spring – Fall

Herbaceous Perennial



Monarch Butterflies

are one of our most beloved animals — an insect that makes an amazing annual migration.

During spring and summer, monarchs breed throughout the U.S. and southern Canada. In the fall, adults of an eastern population migrate to Mexico, flying up to 3,000 miles. In the western U.S., monarchs migrate to scattered groves along the coast of California. The following spring, those butterflies leave their overwintering sites and fly northward in search of host plants on which to lay their eggs. Female monarchs lay eggs on milkweeds and a few other plants in the dogbane family. As monarchs spread across North America, several generations of butterflies are produced. In Florida, some non-migratory individuals remain and breed year-round.

Sadly, population monitoring at overwintering sites in Mexico and California has documented a steady decline. Monarchs are threatened by loss and degradation of habitat, natural disease and predation, adverse weather and the ongoing decline of native milkweeds. Because of monarch's migratory lifecycle, effective conservation strategies need to protect and restore habitat across their entire range.



Milkweeds

Asclepias tuberosa Butterflyweed

Habitat dry soils: open woods, fields, roadsides

Larval host plant, adult nectar source. Plants and seeds are available from limited vendors.



Asclepias incarnata Swamp milkweed

Habitat moist to wet soils: swamps, wet woods, roadside ditches, pond margins

Larval host plant, adult nectar source. Plants and seeds available from several vendors.



Asclepias perennis Aquatic milkweed

Habitat moist to wet soils: swamps, wet meadows, roadside ditches

Larval host plant, adult nectar source. Plants and seeds are available from limited vendors.



Asclepias verticillata Whorled milkweed

Habitat dry to moist soils: open woods, shaded roadsides

Larval host plant, adult nectar source. Plants and seeds not currently available.

Asclepias humistrata Pinewoods milkweed

Habitat dry soils: sardhills, pineyards, dry, sandy woods

Larval host plant, adult nectar source. Plants and seeds not currently available.



Monarchs & Milkweeds



Ask for native milkweeds at your local retail garden center! Be sure to ask for plants that have not been treated with pesticides, which may make them toxic to monarchs and other insects.

In addition to providing a food source for monarch larvae, the showy flowers of milkweeds offer abundant, high quality nectar to pollinators including bees, butterflies and hummingbirds.

Intensifying agriculture, development of rural lands and the use of mowing and herbicides to control vegetation have all reduced milkweeds in the landscape. As a result, the North American Monarch Conservation Plan recommends planting native milkweed species to restore breeding habitat.

Milkweeds are named for their milky latex sap which contains alkaloids and cardiacolides, complex chemicals that make the plants unpalatable to most animals. Milkweeds have fleshy pod-like fruits that split when mature, releasing seeds. Each milkweed seed is attached to fluffy hairs, known as pappus, silk, or floss, that aid in wind dispersal.

The non-native tropical or scarlet milkweed, *Asclepias curassavica*, is by far the most widely available species in the Southeast. While this plant readily supports growing monarch larvae, scientists are concerned that it has negative impacts on monarchs. To avoid the potential risks associated with tropical milkweed, native milkweeds should be grown whenever possible.

While native milkweeds are crucial for monarchs, few commercial sources of plants and seeds currently exist in the Southeast. The Florida Museum of Natural History, the Xerces Society for Invertebrate Conservation, Butterfly Conservation Initiative and the Monarch Joint Venture are working to produce reliable sources of native milkweed. Inventory is expected to increase steadily over the next several years, to meet demand for home gardens and habitat restoration projects across the region.

Butterfly Larvae & Host Plants

Pipeline Swallowtail *Battus philenor*
Virginia Snakeroot *Aristolochia serpentaria*



Giant Swallowtail *Heracles crespontes*
Hercules-Club *Zanthoxylum clava-herculis*



Red-spotted Purple *Limenitis arthemis astyanax*
Black Cherry *Prunus serotina*



Viceroy *Limenitis archippus*
Carolina Willow *Salix caroliniana*



Great Purple Hairstreak *Atides halesus*
Oak Mistletoe *Phoradendron leucarpum*



Cassius Blue *Leptotes cassius*
Doctorbush *Plumbago zeylanica*



Red-banded Hairstreak *Calycopis caryocis*
Winged Sumac *Rhus copallinum*



Atala *Eumaeus atala*
Coontie *Zamia pumila*



Gulf Fritillary *Agraulis vanillae*
Purple Passionflower *Passiflora incarnata*



Question Mark *Polygonia interrogations*
Sugarberry *Celtis laevigata*



Red Admiral *Vanessa atalanta*
False Nettle *Boehmeria cylindrica*



Little Metalmark *Calephelis virginensis*
Purple Thistle *Cirsium horridulum*



Common Buckeye *Junonia coenia*
Oblongleaf Twinflower *Dyschoriste oblongifolia*



Long-tailed Skipper *Urbanus proteus*
American Wisteria *Wisteria frutescens*



Silver-spotted Skipper *Epyargyreus clarus*
Bastard False Indigo *Amorpha fruticosa*



Cloudless Sulphur *Phoebis sennae*
Partridge Pea *Chamaecrista fasciculata*



Southern Dogface *Zerene cesonia*
Summer Farewell *Dalea pinnata*



Little Yellow *Eurema lisa*
Sensitive Pea *Chamaecrista nictitans*



Barred Yellow *Eurema daira*
Shyleaf *Aeshynomena americana*

Dainty Sulphur *Nathalis iole*
Beggarticks *Bidens alba*

Spicebush Swallowtail *Papilio troilus*
Sassafras *Sassafras albidum*

Eastern Tiger Swallowtail *Papilio glaucus*
Tuliptree *Liriodendron tulipifera*

Zebra Swallowtail *Euryides marcellus*
Woolly Pawpaw *Asimina incana*

Palamedes Swallowtail *Papilio palamedes*
Redbay *Persea borbonia*

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www.fmnh.ufl.edu

Native Plant & Service Directory

Restoring La Florida, our Land of Flowers



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THE NATIVE PLANT SHOW April 10-11, 2014 / Kissimmee, Florida 41



www.FloridaNativeNurseries.org | www.NativePlantShow.com

POLLINATOR FRIENDLY LANDSCAPES



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POLLINATORS ARE CRITICAL to our environmental and economic well-being. By conservative estimates, 80% of the earth's flowering plants rely on animal pollinators, primarily insects (such as bees, ants, flies, beetles, and wasps), to ensure reproduction. This includes the vast majority of the fruit, vegetable and seed crops that humans consume, as well as many other plants that provide fiber, animal forage, medicine and fuel. Beyond the direct economic value to humans, insect pollination provides essential maintenance of the structure and function of a wide range of natural communities. It sustains native and introduced plants that control erosion, provides food and other resources for game and non-game wildlife, increases property values, and enhances the aesthetic, recreational, and cultural aspects of human activity.

Alarming, managed and wild insect pollinators have suffered declines in recent years, prompting calls for proactive strategies to help bolster their populations and minimize disruption of the valuable service they provide. Continued declines could adversely affect agricultural systems, result in increased vulnerability of some plant species to extinction, and increase overall ecosystem disruption. Habitat degradation and loss are leading factors driving the downward trend of pollinator populations. While much recent attention has been placed on alternative management approaches in agricultural systems, it is clear

TOP: Our magnificent Southern Magnolia, *Magnolia grandiflora*, evolved before bees and relies on beetles for pollination. Southern Magnolia does not produce a true nectar, but its fragrant sugary secretions attract bees. Here, honeybees wander about the flower, loading up on the abundant pollen to provide them with protein, fats, vitamins and minerals.
ABOVE: Native Halictid bee nectaring on the tiny pink flowers of American Beautyberry, *Callicarpa americana*, a shrub better known to most of us for its striking magenta-colored fruit.