



Bat



Green Scarab Beetle



Syrphid Fly

Photo from wec.ufl.edu

Photo: Paul Skelley, UF/IFAS

Photo by MDC Staff, courtesy Missouri Department of Conservation.

## Beyond the Birds and the Bees - Florida's Other Pollinators

By Mary Lange, Master Gardener Intern 2017

I had never given the subject of pollinators or pollination much thought before my Master Gardener training last year. With classmates Niki Mueller and Lorna Alston, our project was to research this topic; it was an extremely valuable learning experience.

Most surprising was the incredible number and variety of pollinators in Florida. We have honey bees, bumble bees, and hummingbirds that we enthusiastically welcome year-round. Bees rightfully deserve credit as our most important pollinators. But we have so many more pollinators that often go unnoticed and unappreciated. Here are a few favorites:

**Beetles:** Fossil records indicate that beetles have been working as pollinators for the last 200 million years, long before bees made their appearance on earth. While beetles may not be as quick and efficient as bees, they slowly but surely get the job done. Beetles are important for ancient species such as magnolias and spicebush.

Common Florida beetles include soldiers, green scarabs, and flower scarabs. Beetles favor plants with large solitary flowers (magnolias and pond lilies) as well as plants with clusters of small flowers (for example, goldenrod and spirea).

**Flies:** Flies are not as hairy as bees and therefore less efficient in carrying pollen, but many are still good pollinators. Flower flies (e.g., green bottle, and syrphid or

hover flies) help pollinate fruit crops including strawberries and blueberries. Chocolate lovers, like myself, are indebted to the midge fly that pollinates tropical cacao plants.

**Bats:** Over 300 species of fruit rely on bats for pollination. In Florida, we have 13 native species of bats that pollinate our mango, banana, and guava trees and help spread their seeds. The agave plant, used to make tequila, is also dependent upon bats to pollinate its flowers and ensure reproduction. In addition to their key pollination role, bats also feed on harmful insect pests including mosquitoes and agricultural pests.

Finally, I should mention **butterflies**. I love butterflies but they disappointed me this year. Intent on getting my zucchini and cucumber plants to produce, I planted milkweed and counted on the beautiful monarchs that followed to pollinate my vegetables. I counted wrong. As it turns out, butterflies are effective pollinators for flowers but not vegetables, not to mention that monarchs prefer milkweed above all else. After yet another season of beautiful squash and cucumber blossoms but no fruit, I'm ready to concede that bees are probably the best.

For more information:

<https://www.fs.fed.us/wildflowers/pollinators/animals/index.shtml> and

[https://plants.usda.gov/pollinators/Native\\_Pollinators.pdf](https://plants.usda.gov/pollinators/Native_Pollinators.pdf).



# What's This? The Thread-Waisted Wasp

By Norma Kisida, Master Gardener 2012



Photo credit: Norma Kisida, Master Gardener

Thread-waisted wasp on seaside goldenrod



Photo credit: <https://commons.wikimedia.org/wiki/>

Thread-waisted wasp carrying caterpillar

Thread-waisted wasps are large solitary wasps in the Sphecidae family which also includes some mud daubers and digger wasps. They are named for their long-stalked abdomen. The wasp pictured above (*Ammophila* spp.) is about 1-1 ½ inches long and black with an orange band on a long thin abdomen that is swollen at the tip.

The adult wasps feed on nectar or pollen from flowers such as asters, Queen Anne's lace, horsemint, and goldenrod, while the larvae feed on insects or spiders. The larvae of the one above feeds on caterpillars and saw flies. The female digs several burrows in bare soil and provisions them with a paralyzed caterpillar. The wasp paralyzes its prey by pinching or crushing the neck with its jaws, then stinging it with venom that immobilizes but does not kill. The wasp is designed to carry heavy caterpillars and drag them to the burrow. It lays a single egg on the caterpillar. The egg hatches and uses the prey for food. The adult female may return to the camouflaged nest to reprovision her larvae. The larvae come out in mid to late summer as adults. An interesting video of this amazing process can be found at <https://www.youtube.com/watch?v=QwS4-6MIMew>.

These wasps are beneficial insects in the garden by capturing destructive caterpillars although they may prey on nondestructive ones as well.

For more information: Sphecid Wasps - [www.extension.umn.edu/garden/insects/find/sphecid-wasps/](http://www.extension.umn.edu/garden/insects/find/sphecid-wasps/).

**Cold Damage In Your Landscape?**  
**Visit** <http://gardeningsolutions.ifas.ufl.edu/care/weather/treating-cold-damage.html>





# Pruning Trees

By Rob Hinz, Master Gardener 2016

Pruning is a must if you want strong and healthy trees. It is a complex topic, so I am using one of our most common species, the Southern live oak (*Quercus virginiana*) as an example.

The 2017 hurricane season was very active, creating numerous problems for live oaks. Perhaps you saw some downed oak trees and branches, or even experienced them in your own yards. Could pruning have prevented some of these problems?

**What is pruning and what are the benefits to the plants involved?** Per Dr. Edward F. Gilman, a retired University of Florida expert on trees, "Pruning is the planned, selective, careful removal of plant parts, (typically shoots and branches), to improve health, control growth or enhance fruiting, flowering or appearances." Pruning is a skilled treatment to remove unwanted plant parts and create a healthy plant.

**Young trees** are pruned to establish a dominant stem and to correct structural defects. Young trees can withstand the pruning of up to 25 percent of live foliage. On average, for the first three years, young trees should be pruned yearly. Trees that you buy from a nursery are usually older than three years. Trees should be pruned every five years to age thirty or older.

Young tree branches are mostly temporary; however, it is important to select a stem to become the leader (dominant trunk). Other branches greater than 1/2 inch in diameter of the trunk should be reduced or removed especially those competing with the leader stem. Branches low in the canopy, and those broken, damaged, or cracked should also be reduced or removed.

**Mature trees** are pruned primarily for safety, clearing passages for pedestrians and traffic, and to minimize limb and tree failure. Mature trees should have no more than 5 to 10% of live foliage removed. (Dead foliage does not

matter in this equation since the tree doesn't derive food from the dead matter.) Branches with included bark (bark that forms between two limbs that form a V shape) should be reduced. Remove any branches lower than the lowest permanent limbs of the tree. (This is for you to decide—for example, you may want no branches under 7 feet over a sidewalk.) If there are branches competing with the main trunk, remove these. Primary limbs that form the canopy (called the scaffold limbs) should be identified, and all branches within 18 inches of these scaffold limbs should be reduced. In thirty-year-old trees, the scaffold limbs should have more space. Remove branches that are closer than 18 to 60 inches.

The best time to prune live oak trees is during the dormant season, although we don't have much of a dormant season in Manatee County. Pruning after Valentine's Day is usually considered safe because it is just before the early spring growth season, and will allow proper tree wounds to recover during the entire growing season. Removing diseased, dying, dead, and broken limbs can be done at any time.

For more information with photos and diagrams:

<http://hort.ifas.ufl.edu/woody/thinning-canopy.shtml>  
"Thinning the canopy"

<http://hort.ifas.ufl.edu/woody/pruning-when.shtml>  
"Time of year (when to prune)"

[http://hort.ifas.ufl.edu/woody/documents/ch\\_13\\_mw06.pdf](http://hort.ifas.ufl.edu/woody/documents/ch_13_mw06.pdf)  
"Developing a Preventative Pruning Program in Your Community: Mature Trees"

<http://edis.ifas.ufl.edu/st564>  
"*Quercus virginiana*: Southern Live Oak"

[http://hort.ifas.ufl.edu/woody/documents/ch\\_12\\_mw04.pdf](http://hort.ifas.ufl.edu/woody/documents/ch_12_mw04.pdf)  
"Developing a Preventative Pruning Program: Young Trees"



# Alternatives to Invasive Plants in Florida

## Part 3: Replacing Lantana

By Nancy Hammer, Master Gardener 2014

Invasive *Lantana camara* is commonly found in Florida landscapes.

**THE BAD ACTOR:** *Lantana camara* is a tough, low maintenance, salt tolerant, freely self-seeds, easy to propagate perennial distinguished by its multicolored flowers which attract butterflies. It is a native to the West Indies and was made popular in Europe starting in the 18<sup>th</sup> century with hundreds of cultivars being developed. It is frequently used in flower gardens, containers, and hanging baskets. It is particularly popular in Florida, and thus many garden centers carry it.

Unfortunately, it is also a Category 1 invasive plant in Florida which means it is altering native plant communities by displacing native species, changing community structure or ecological functions, or hybridizing with natives. Invasive lantanas have hybridized with Florida native lantanas (*Lantana depressa*.) The leaves are extremely toxic to pets and livestock, and while

the ripened berries are a food source for birds, there have been reports of children being poisoned after consuming unripened berries.

Wild-sage or buttonsage (*Lantana involucrata*) is a native shrub, grows 4-8 feet, has white or pink flowers with a yellow center, and the leaves smell like sage when crushed. It is a food source for numerous butterfly species.



Photo credit: George D. Gann, 2016, The Institute of Regional

Wild-Sage



*Lantana depressa*

Photo credit: UF/IFAS Assessment of Non-Native Plants in Florida's Natural Areas, by Franz Xaver, Share Alike 3.0 via Wikimedia Commons

*Lantana camara* 'Bloomify Red' and 'Bloomify Rose' are two new highly-infertile cultivars developed by University of Florida with a mounding growth habit. They grow to about 11 inches wide and 10 inches tall. Flowers are initially yellow, and later turn red or magenta. They are available in some local garden centers. For more information on UF/IFAS assessments of these cultivars, refer to EDIS publication #EP544 "Bloomify Red" and "Bloomify Rose" Two Infertile *Lantana camara* Cultivars for Production and Use in Florida.

continued on page 5





Bloomify Red

African bush daisy (*Euryops chrysanthemoides*) is a non-invasive that bears numerous butterfly-attracting, bright yellow flowers held above lacy foliage through much of the year. It can grow 2-4 feet in height, with a 3-4 feet spread. It is suitable for mass plantings, mixed borders and in containers.

African Bush Daisy



L. Krumholz



L. Krumholz

Blue porterweed (*Stachytarpheta jamaicensis*) is a native that grows to about 1 to 3 feet tall by 3 feet wide with blue flowers at the ends of long, drooping stems. It can be used as a groundcover and in butterfly gardens.



Blue Porterweed

© 2012 Mark Hutchinson

Other substitutes include non-invasive blue daze (*Evolvulus glomeratus*) and native beach sunflower (*Helianthus debilis*).



Blue Daze

Photo Credit: Karen, <https://plants.ces.ncsu.edu/>

For more information on the plants above, search EDIS/UF IFAS <http://edis.ifas.ufl.edu/> online publications, or call the Extension Plant Diagnostic Clinic (941) 722-4524.

Additional articles on Florida invasive plants and substitutes will follow in future issues.



# Mangroves: A Keystone Ecosystem

By Jim Haupt, Master Gardener 2015

*"At the intersection of land and sea, mangrove forests support a wealth of life, from starfish to people, and may be more important to the health of the planet than we ever realized." (National Geographic, Feb. 2008)*



Photos from plants.ifas.ufl.edu

What is the connection between a plateful of shrimp, a Thai fisherman, hurricanes, a manatee, Florida fisheries, and mangroves? For wildlife, humans, and shorelines, mangroves are an indispensable resource.

Mangroves are tropical and subtropical trees and shrubs that grow between low mean sea level and high spring tide. In Florida, there are three true mangroves; the red mangrove (*Rhizophora mangle*), the black mangrove (*Avecennia germinians*), and the white mangrove (*Laguncularia racemose*.) They grow from Cape Canaveral in the east, extending south along the coastline to Key West, and then north to Cedar Key on the Gulf. Approximately 2,700 square kilometers of Florida mangroves protect our shorelines from strong winds and aggressive wave action, helping to control erosion. Furthermore, mangrove forests consume huge amounts of carbon dioxide from the atmosphere, filter and remove runoff and pollutants, and protect sea grass beds and coral reef communities.

Florida's mangroves provide food, nesting areas, and nurseries for 220 species of fish, 24 species of reptiles and amphibians, 18 species of mammals, and 181 species of birds. (Clark, 2009). Clustered around the intricately woven prop roots of red mangroves, for example, are a wide variety of mollusks, gastropods, oysters, mussels, and clams. The coastal ecosystem is harsh, but mangroves can survive the elements! They can tolerate soil without oxygen, endure fluctuating water levels, and survive in water with a salt concentration that would kill an ordinary plant.

Mangroves are a "keystone" species upon which other species largely depend and, if removed, would drastically change the ecosystem. In an ecosystem, all living things rely on each other, but some species, like mangroves, are crucial to the way all species interrelate.

Mangroves add to the economy of the state. 75% of Florida's game fish, and 90% of fish important to Florida's fishing industry depend on mangroves for some part of their life cycle. In 2012, environmental economists estimated a mature stand of red mangroves in Lee County alone contributed \$12,169.98 per acre per year to Florida's commercial fishing industry. Researchers estimate that mangroves offer humans "free" services worth over one billion dollars annually.

Unfortunately, mangroves are highly threatened. It is estimated that coastal development and aquaculture have caused the loss of at least half of the world's mangroves and the destruction rate will carry on by at least one percent a year. Homeowners with mangroves should appreciate the beauty above and beneath these invaluable plants and take great interest in their proper care.

*"If there are no mangrove forests, the sea will have no meaning. It is like having a tree with no roots, for mangroves are the roots of the sea."*  
(Fisherman from the Trang Province in southern Thailand, *ibid.*)

<http://edis.ifas.ufl.edu/pdf/IN/IN19500.pdf>

<https://soils.ifas.ufl.edu/wetlandextension/types/mangroves.htm>





Tree

Photo: Matt Ritter, Pacific Horticulture Society



Leaves

Photo: Doreen Wynja, Montevia



Berries

Photo: Traveltoeat.com



Flowers

Photo: Matt Ritter, Pacific Horticulture Society

# JAPANESE BLUEBERRY

By John Dawson, Master Gardener 2007

A relative newcomer to the Florida homeowner landscape is the versatile Japanese blueberry (*Elaeocarpus decipiens* or *Elaeocarpus dentatus* - a larger tree with similar characteristics.) *E. decipiens* produces small white flowers in the spring followed by dark blue inedible berries (to humans, not to birds) in fall and winter.

The Japanese blueberry is a very slow grower between 15 to 20 feet, but it can be kept much shorter by pruning. The tree has dense deep green leaves with an occasional bright red leaf here and there. Although the foliage has a tropical appearance, it can be pruned to give it a Christmas tree look or pruned to look like a standard tree. This is a cold hardy evergreen tree that prefers full to partial sun.

Prune Japanese blueberries no more than two times a year. Since it has a slow growth rate, it will take time to flush back out. If you are not into a Christmas tree form, the tree can be topped and shaped as you desire. Any hard pruning should be done during warm weather.

As with any other fruiting trees, it needs well-draining soil. It should be watered as needed during our dry season. Its compact form allows planting nearer to our homes. You can plant it as close as four feet from the house, three feet

away from shrubs and six feet away from hard surfaces (sidewalks and driveways.)

Fertilize three times a year using a balanced quality granular fertilizer and remember to obey our counties fertilizer ordinance.

For more information on Japanese Blueberry please go to:

<http://hort.ifas.ufl.edu/woody/Pages/eladen/eladen.shtml>.



Christmas Tree Form

Photo: Florida Association of Native Nurseries



# February

## CALENDAR OF EVENTS

Photo Credit: C.T. Johansson, <https://commons.wikimedia.org>

Date	Time	Event
1 <sup>st</sup> Saturday	10:00 a.m.-1:00 p.m.	<b>Ask a Master Gardener</b> – Island Library – 5701 Marina Drive, Holmes Beach. Visit the Extension Master Gardener information table and get answers to your gardening questions.
2 <sup>nd</sup> & 4 <sup>th</sup> Saturday	10:00 a.m.-1:00 p.m.	<b>Ask a Master Gardener</b> – Rocky Bluff Library – 6750 US Highway 301 N., Ellenton. Visit the Extension Master Gardener information table and get answers to your gardening questions.
2 <sup>nd</sup> Saturday	10:00 a.m.-1:00 p.m.	<b>Ask a Master Gardener</b> – South Manatee Library – 6081 26 <sup>th</sup> Street West, Bradenton. Visit the Extension Master Gardener information table and get answers to your gardening questions.
Saturday February 10	9:00-11:00 a.m.	<b>Extension Master Gardener Plant ID Tour – Emerson Point Preserve</b> - Stroll through Emerson Point Preserve to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. Tour begins in tower parking area at 5801 17 <sup>th</sup> Street West, Palmetto. Call the Extension Master Gardeners at (941) 722-4524 to register.
Saturday February 10	9:00-11:00 a.m.	<b>Extension Master Gardener Plant ID Tour - Riverview Pointe Preserve</b> – DeSoto National Memorial – Stroll through Riverview Pointe Preserve to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. The hike begins in the parking area of the DeSoto National Memorial Park and enters into the Riverview Preserve at 8250 DeSoto Memorial Highway, Bradenton. To register call the Extension Master Gardeners at (941) 722-4524.
Saturday February 17	9:00-11:00 a.m.	<b>Extension Master Gardener Plant ID Tour - Rye Preserve</b> - 805 Rye Wilderness Trail, Parrish 34219. Meet at Rye Preserve on the east side of Rye Road and North of Manatee River. Drinking water and hiking sticks are recommended. There are places to enjoy a picnic lunch, if desired. Register by calling the Extension Master Gardener Plant Diagnostic Clinic (941) 722-4524.
Saturday February 17	10:00 a.m.-Noon	<b>Herbs in the Florida Garden</b> - Start this season with your own herbal garden! Let us introduce you to some of the herbs that thrive in our Florida climate. Explore how to grow them and use in your kitchen. Information will be given on their medicinal values and how they may affect or enhance your health. \$5 administrative fee. <a href="#">Click here</a> to register or call the Extension Master Gardeners (941) 722-4524.
Saturday February 17	1:00-3:00 p.m.	<b>Organic Vegetable Gardening</b> - Grow your garden the natural way. This class covers the basics of organic vegetable gardening including plant and seed selection, soil building and fertilizing, weed management, and more. \$5 administrative fee. <a href="#">Click here</a> to register or call the Extension Master Gardeners (941) 722-4524.
Sunday February 18	9:00-11:00 a.m.	<b>Extension Master Gardener Plant ID Tour - Robinson Preserve</b> – Stroll through the Robinson Preserve's salt marshes to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. Tour begins in parking area by main entrance at 1704 99 <sup>th</sup> Street Northwest, Bradenton. To register call the Extension Master Gardeners at (941) 722-4524.
Saturday February 24	10:30 a.m.-Noon	<b>SSSnakes</b> - Learn about these interesting, mysterious, and often maligned reptiles, especially how to distinguish between venomous and non-venomous snakes. \$5 administrative fee. <a href="#">Click here</a> to register or call the Extension Master Gardeners (941) 722-4524.
Saturday February 24	10:00 a.m.-11:00 a.m.	<b>Our Gentle Giant: The Manatee</b> - An introduction to the animal we get our County's name from...the Manatee! Why are they so special? Topics of discussion include their physiology, habitat, habits, and threats they face. "Touch and Feel" opportunities. <a href="#">Click here</a> to register or call the Extension Master Gardeners (941) 722-4524.
Tuesday February 27	10:00 a.m-Noon	<b>Drought Tolerant Plants 101</b> - Learn how to choose beautiful drought tolerant plants for your landscape and know what to put back on the shelf! Valrie Massey, Horticulture Program Assistant, will discuss the difference between the good and the bad plant. This class satisfies the landscape educational requirement for the Manatee County Outdoor Water Conservation Rebate Program. <a href="#">Click here</a> to register or call Joann (941) 722-4524.

UF IFAS Extension  
UNIVERSITY OF FLORIDA



**University of Florida IFAS Extension - Manatee County**  
**1303 17<sup>th</sup> St. W., Palmetto, FL 34221 Telephone: (941) 722-4524**  
**Web site: <http://manatee.ifas.ufl.edu> E-mail: [ManateeMG@gmail.com](mailto:ManateeMG@gmail.com)**



The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information, and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions, or affiliations.