



## The Master Gardening Bench



The Manatee County Master Gardener Newsletter
October 2019 - Volume 18 – Issue 9

All articles are researched utilizing UF/IFAS Extension and/or other educational sources unless otherwise noted

# Open Garden Event to Celebrate 40<sup>th</sup> Anniversary of Manatee County Master Gardener Volunteers!

By John Dawson, Master Gardener Volunteer 2007, and Amy Stripe, Master Gardener Volunteer 2008

This year marks the 40<sup>th</sup> anniversary of the University of Florida/IFAS Extension Manatee County Master Gardener Volunteer program. Since 1979, hundreds of Manatee County Master Gardener Volunteers have helped provide horticultural education and assistance to thousands of Manatee County residents.

To celebrate, please join us in our Open Garden event November 8 – 9 at 1303 17<sup>th</sup> St. W. in Palmetto, from 9:00 A.M. to 12:00 P.M. both days. Garden tours and Florida-Friendly landscaping tips will be featured, along with children's activities on Family Day (November 9) and free refreshments.

Master Gardener volunteerism had its origins in Tacoma, Washington in 1971 when television and radio gardening shows in the area were making the public aware that their local Extension office was the place to go for help with gardening questions. Extension agents in the surrounding counties were soon overwhelmed with homeowner questions. Agent David Gibby was receiving almost 200 calls a day.

This led Gibby and fellow agent Bill Scheer to initiate the first Master Gardener Volunteer training session. Their concept was to attract and train willing and knowledgeable volunteers to serve the public and provide Extension agents needed assistance. Recruitment for volunteers was a careful selection and screening process. A title for the program was needed and an appropriate and distinguished volunteer moniker would also be necessary.

Both Gibby and Scheer had worked in Germany acquiring language proficiency and understanding of

the culture; they knew that Germans bestow titles for hard-earned proficiency levels in various crafts. The top proficiency level in horticulture in Germany is denoted by "Gartenmeister," or "Garden Master", which they anglicized to "Master Gardener." This title seemed appropriate for volunteers who would receive extensive training.

In 1975, Dr. James Stephens, from the Department of Vegetable Crops at the University of Florida, was attending a convention in Biloxi, Mississippi when he learned of the Master Gardener Program in Washington state. After four years of discussion and study, the Florida Master Gardener program was initiated and established in three Florida pilot counties: Brevard, Manatee and Dade. Susan Gray, assistant to Mr. Stephens, became the first statewide coordinator.

The first training classes were held in September of 1979 with 21 students representing Manatee County, among them Mr. Larry Bearse, our longest serving Master Gardener (1979 - 2015). The first Master Gardener Volunteer training classes were taught by state specialists from UF Gainesville and later by county Extension agents.

Today there are some 80 active Manatee County Master Gardener Volunteers. We operate a Plant Clinic where you can call or visit with questions (Monday-Friday except Wednesdays; tel. no. 941-722-4524) or email us at <a href="mailto:manateemg@gmail.com">manateemg@gmail.com</a>. We operate an educational garden open to the public (call in advance to schedule a tour.) Our training class for volunteers begins accepting applicants in June.







#### Manatee County Agriculture and Extension Service

1303 17th Street West - Palmetto, FL 34221

Telephone: (941) 722-4524 ~ <a href="http://manatee.ifas.ufl.edu">http://manatee.ifas.ufl.edu</a>.

Master Gardener Volunteer Amy Stripe & Joy Derksen, Co-editors
Contents reviewed & edited by Alyssa Vinson, Extension Agent
Send a photo or gardening problem via e-mail to the Master Gardeners
at ManateeMG@gmail.com or visit them at the County Extension Office
Monday – Friday 9:00 a.m. to 4:00 p.m.; closed on Wednesday



#### What's This?

#### **Scurf on Palm Trees**

By Amy Stripe, Master Gardener Volunteer 2008







Certain species of palms display what appears to be a huge infestation of scale insects on their leaflets and leaf midribs. Young pygmy date palms (*Phoenix roebelenii*) are particularly concerning to homeowners, but as the leaves age, the scurf falls off. Scurf is a natural occurrence on most date (*Phoenix* spp.) palms, not an insect problem.

In some palms, like the foxtail (*Wodyetia bifurcata*), black-colored scurf appears at the bases of the petioles. This black scurf is very similar in appearance to the sooty mold often associated with aphids, scales, or mealybugs. The purpose of scurfs is not known, but it is completely harmless. For more information on palms and their care, sign up for our class on October 12<sup>th</sup> (see Calendar of Events, last page, for details.) Or for more information, visit: <a href="https://edis.ifas.ufl.edu/ep344">https://edis.ifas.ufl.edu/ep344</a>.





#### Workshop on Understanding Plant Toxicity

What exactly do we mean when we say a plant is poisonous? Why do plants even produce poisonous compounds? What factors influence how our bodies react when we are exposed to poisons? And how do we avoid exposure to plant toxins?

Dr. Marc Frank, Extension Botanist at the University of Florida Herbarium, will provide answers to these questions and help to dispel some common misconceptions about plant toxicity. Marc manages the UF Herbarium's Plant Identification and Information Service, which serves Cooperative Extension personnel, UF faculty, and other clients throughout the state of Florida.

Saturday, November 16<sup>th</sup> from 10:00 A.M. to 12:00 P.M. University of Florida/IFAS Extension Manatee County 1303 17<sup>th</sup> St. W., Palmetto, FL 34221

There is a \$5 administrative fee for advance registration; \$8 day of workshop. Register at https://plant\_toxicity.eventbrite.com or by calling (941) 722-4524.

# Blame it on the Rain (or Too Much of a Good Thing Can be Bad)

By Mary Lange, Master Gardener 2017

Welcome back, winter residents! We have some good news and bad news to share with you regarding the 2019 summer weather and its potential impact on your landscape. The good news (knock wood) is that we have thus far escaped hurricanes and tropical storms worthy enough to be given a name. The bad news, starting in August, is rain. Lots of rain!



Normal August rainfall for the Bradenton area is just over 9 inches; this year, we received almost 13 inches. This included light showers as well as torrential downpours on 22 out of the

31 days in the month. As of my deadline, September records were not complete, but my editors reported almost 5 inches at their faithfully recorded locations in the first half of the month.

Your water bill (assuming you installed a rain sensor as required under Florida law for home irrigation systems) should be much reduced compared to previous years. However, you may notice some unwelcome changes in your landscape as a result of so much rain.



Most obvious will be "leaners" - trees whose root system, weakened by raindrenched soil, can no longer support a top-heavy canopy. If you find your trees leaning over, you may be able to

stake them upright to allow the root system to strengthen over time. However, these trees are likely to remain more vulnerable to future storms and hurricanes. Next spring, before you leave, scan your landscape for top-heavy trees and consider a preventive pruning to give them a better chance of withstanding the rains to come.

Even your still-upright trees may not have been unscathed by our summer downpours. If you see signs of leaf loss and no new leaf formation, this may also indicate soil saturation. Sustained saturation can literally drown a tree, preventing roots from absorbing oxygen as well as essential nutrients.

Yellowing leaves may be a sign of iron deficiency (or chlorosis) in plants due to "wet feet." It may already be too late, but to give your tree a fighting chance, Sheila Dunning, an Okaloosa County Extension Agent, recommends (1) removing mulch from around the tree to increase oxygen uptake in the soil and, (2) resisting pruning and fertilizing (added stressors) until the following growth season.



Take a close look at your shrubs as well. You may notice that the mulch you carefully laid down earlier this year has been washed away and the soil at the base of the plant may be

eroded. These drawbacks have simple fixes: a few bags of topsoil can cover exposed roots, and your landscape was probably already due for another layer of mulch.

Not quite as evident, however, are the bacterial and fungal infections that can increase in a constantly wet environment. Be sure to inspect your plants and grass carefully for signs of powdery mildew (photo above), leaf spot, and root rot. If you identify blighted plants or grass, remove infected areas and properly treat with organic fungicides.

We hope you enjoy your upcoming winter in Florida. Please visit or call the Manatee County Agriculture and Extension Office (1303 17<sup>th</sup> St. W, Palmetto; (941) 722-4524) if you have any questions about your landscape or garden.

For more information:

http://gardeningsolutions.ifas.ufl.edu/care/weather/dealing-with-heavy-rain.html,

https://fawn.ifas.ufl.edu/tools/factsheets/pdf/fawn rainShuttoffFactsheet.pdf,

https://nwdistrict.ifas.ufl.edu/hort/2013/09/30/we-had-plenty-of-rain-why-are-my-trees-dying/, https://hort.ifas.ufl.edu/woody/soft-soil-elm.shtml.







### ZOOM! ZOOM! ZOOM!

BY ROB HINZ, MASTER GARDENER 2016

This title is taken from the boyhood recollections of Master Gardener John Dawson and aptly describes the humming sound created by the rapid movement of wings which gives the hummingbird its name. Hummingbirds are only found in the Western Hemisphere with three of the 338 known species occurring in Florida. Those species are the ruby-throated (Archilochus colubris), the black-chinned (Archilochus alexandri), and the rufous (Selasphorus rufus) - with an occasional stray spotted. Their vibrant colors come from prism-like cells in their neck feathers that reflect light. Males have brighter colors than females.

All three hummingbirds have thimble-sized nests located in pines and hardwood trees. These little birds have voracious appetites, consuming more than half their weight in food and eight times their weight in water. Their diet consists of nectar, tree sap, and small insects.

The ruby-throated hummingbird is the most common in Florida. They winter in Central America and migrate north, arriving in Florida in mid-March. Some will stay in Florida while others continue their migration. By October, most begin their migration back south. Both sexes of ruby-throated have metallic green crowns and upperparts with grayish to white underparts. Males have a black face and an iridescent reddish throat, or gorget. Ruby-throated hummingbirds inhabit forest edges, meadows, stream borders and backyards.

Black-chinned hummingbirds are cousins of the ruby-throated. They normally reside in the western United States, but they have been spotted on the northern Gulf coast and in central Florida during winter. Males have a black throat that exhibits a violet edge in bright light with a white collar below. They have a greenish head and upperparts, white underparts and dusky flanks and sides. Females look like ruby-throated females with the exception of dusky colored sides and flanks. Wintering birds are generally found in the shade of oak trees.

Rufous hummingbirds have the greatest migration distance of any bird except arctic terns (*Sterma paradisaea*). They travel nearly 4,000 miles in a clockwise circle from Alaska to Mexico with some finding their way to the northern Gulf coast in

winter. The birds are feisty and chase predators that get too close to their nests. Males have a rufous (red-orange) back, with green markings, and rufous underparts. The gorget shines red-copper in good light. Females are like ruby-throated females except for small spots on the white throat and rufous sides and flanks. You will find them in oaks and pines and in elevations from sea level to 12,000 feet.

One principle of Florida-Friendly Landscaping™ is "Attract Wildlife." Native plants of Florida provide colors of red, pink, and orange which attract hummingbirds. Try to select plants that bloom in all seasons. There are many choices that include trees, shrubs, vines, and flowers, both perennial and annual. Here are a few suggestions: Powder puff trees (Calliandra spp.), butterfly bush (Buddleia lindleyana), firebush (Hamelia patens), firespike (Odontonema spp.), trumpet vine (Campsis radicans), coral honeysuckle vine (Lonicera sempervirens), shrimp plant (Justicia brandegeana), red basil (Calamintha coccinea), butterfly milkweed (Asclepias tuberosa), and scarlet morning glory (Ipomoea coccinea).

The following references may be helpful: <a href="https://edis.ifas.ufl.edu/uw059">https://edis.ifas.ufl.edu/uw059</a>, <a href="http://blogs.ifas.ufl.edu/pinellasco/2013/10/03/hummingbirds-in-your-backyard/">http://blogs.ifas.ufl.edu/pinellasco/2013/10/03/hummingbirds-in-your-backyard/</a>, or <a href="http://baysoundings.com/hummingbirds-in-florida-if-you-plant-it-they-will-come/">http://baysoundings.com/hummingbirds-in-florida-if-you-plant-it-they-will-come/</a>.

Nectar feeders, using a clear sugar solution, can supplement the plants in your yard. Generally, a one-part white granulated sugar to four-part water solution is used. Boil the solution to dissolve the sugar and help eliminate bacteria. Change the feeder solution several times a week to decrease fermentation. Hot water and white vinegar should be used to clean the feeders while avoiding the use of alcohol or chlorine bleach.

A new appreciation of your plants and hummingbirds is yours with a little planning and planting. You will soon experience a feeling of delight as you watch the birds zooming, hovering, and feeding in your yard.







Onion Set Ginger Root Herb Cutting

# **Growing Your Kitchen Scraps**

By John Dawson, Master Gardener 2007

Instead of discarding or composting kitchen scraps, consider a third alternative: propagation. Plants are tenacious survivors and if given the right growing conditions, they will resurrect themselves from the trash bin.

The following propagation techniques are fun learning experiences for the whole family. All you need is some windowsill space, water, toothpicks, and a few containers. To ensure a greater chance of success, I suggest using rainwater or tap water that has been left to sit for a day.

Leafy Herbs	Ever want some cilantro or basil but find the store bundles are too big for what you need? Cut some to three inches, strip off bottom leaves, place in a glass of water, and set it on a sunny windowsill. You will need to change the water every other day; within a week you should see roots developing along the lower stalks.
	Once roots are about 1to 2 inches long, carefully transplant them into a pot. All leafy herbs including mint can be propagated this way. Leave mint in pots, as it will get out of control when planted in the ground.
	Beets, carrots, turnips, radishes, parsnips, etc., can all be grown from their tops that are normally tossed. The tops are very nutritious and may be added to soup stock.
Root Crops	Or propagate them: take about ½ inch of root tops (pruned of leaves), suspend in a container of water, allowing enough space for a new root to form (toothpicks are handy for this). Place in your sunny windowsill and change the water every other day. You should notice new leaf growth in a few days with the beginnings of a new root to follow later. When the root is a few inches long, transplant carefully in loose soil.

Potatoes	Potatoes can be grown from peelings. You need potatoes that have eyes on them.
	When peeling, be careful not to damage the eyes. You want a strip that is about two
	inches long and has a minimum of two eyes (more is better).
	Allow to dry overnight and plant in a container about four inches door with ever
	Allow to dry overnight and plant in a container about four inches deep with eyes
	facing up. Keep soil moist and in a sunny spot. A new plant should surface in a few weeks. You can also use potato chunks with eyes in the same way.
	Sweet Potatoes can be grown from a leftover end about two inches long or more.  Suspend the end using toothpicks above a container of shallow water, changing every
Sweet Potatoes	other day. Roots will begin to appear in just a few days and sprouts (known as slips)
	will be seen on top of the potato around the same time.
	Will be seen on top of the potato around the same time.
	Once the slips reach about four inches, twist them off and place them in a new
	container of water, changing every other day. When the roots from these slips in the
	new container reach about an inch in length, you can plant them in a pot or into
	your garden. Plant just enough to cover the roots.
	Basically, any veggie with a white bottom can be regrown. Cut of the ends (about 2
Lottuco colomi	inches) and place in a bowl of warm water covering about half the end, with the leafy
Lettuce, celery,	side up. Place in your sunny windowsill and make sure the water does not dry out of
cabbage, Bok choy,	the bowl. Change the water every day.
•	
broccoli, cauliflower	In about a week you will see new leaf and root growth. You can now plant it into your
	garden or a container. Lemon grass can also be regrown this way.
	Usually after grating, there always seems to be leftover parts of the rhizome. If you
Ginger and Turmeric	have a piece that has at least two buds, you can plant it bud side up, using enough soil
	to cover the rhizome. This time you do not want to place your pot in full sun as both
	turmeric and ginger prefer mostly shade.
	They both make excellent house plants and produce flowers after the second year.
	Once established, you can take what you need from your pot, but make sure to leave
	enough for new growth.
	Place the root end of your onion in a bowl with water just deep enough to cover the
	roots. In about a week, you should see some new green growth. Plant the onion in a
Onions	pot or in the garden just deep enough to cover all the roots with the bulb part
	exposed. Trim some, but not all the new growth, and use as you would green onions.
	Trimming the roots causes the bulb to grow bigger.
	In about three to four months, you will have a new mature onion. Green onions,
	leeks, scallions, and chives can be grown as you would the white bottom veggies. Do
	not plant new bulbs too deep: keep about half to two thirds above ground.
	Use ONLY heirloom veggies to ensure they come true to the parent. Dry the seeds (coffee filters work best for this) and plant. Seeds of tomatoes and cucumbers need to
Veggies with Seeds	be soaked for a few days until a foam forms, then rinse, drain, dry, and plant.
	be source for a few days with a roam forms, then finse, drain, dry, and plant.
	Dried beans and dried whole peas used in soups can be planted as seeds. Some herb
	and spice seeds can be planted if they are fresh (prior to expiration). <i>No, you can't</i>
	plant bagged rice.
	F

When the time comes to transplant outdoors, make sure you time this to the proper planting dates for each crop; for more information, visit (<a href="https://edis.ifas.ufl.edu/pdffiles/VH/VH02100.pdf">https://edis.ifas.ufl.edu/pdffiles/VH/VH02100.pdf</a>.

# Seaside Goldenrod





## Golden Blooms for Fall

By Norma Kisida, Master Gardener Volunteer 2012

Just when the spring and summer wildflowers have faded and set seeds, the fall bloomers start their display. Some of the stars of fall are the goldenrods (*Solidago* spp.), especially when mixed with other fall blooms such as the lavender blazing star (*Liatris spicata*). There are approximately 21 species of goldenrod in our state. Goldenrods play some very important roles including providing nectar for bees, butterflies and other insects, and food and cover for birds and other wildlife. The goldenrods have a long history of medical use, as dyes, and as teas. The three Florida native goldenrods discussed here are species that are available at local native nurseries and are suitable for home landscapes, especially natural areas and wildflower gardens.

Seaside goldenrod (*S. sempervirens*) is a clumping perennial with golden tubular blooms along the wand-shaped stems in the fall. It is the tallest of those discussed here, reaching six feet or more and clumps spanning over a foot. Because of the height it is best staked or planted against a fence where it can be secured. Another option is to cut it back mid-summer before the blooms start to form and cut back again after it blooms to keep it shorter. The plant spreads by rhizomes and seeds, so it needs plenty of space to make a big show. In my garden I remove plants that pop up where I don't want them and relocate or pot them up for use in other gardens. It is very salt tolerant and does best in full sun. Planting in sandy well-drained, infertile soil helps control the height.

**Chapman's goldenrod** (*S. odora* var. *chapmanii*) is a shorter (three to four feet) goldenrod with golden yellow showy spikes on the ends of the stems. It does best in sunny locations, blooming in late summer to early fall. This goldenrod prefers well drained sandy or limestone soils and does not require supplemental water once established. It is not salt tolerant and is best used in natural habitats and wildflower gardens. It spreads by seeds, not rhizomes.

**Pinebarren goldenrod** (*S. fistulosa*), our most common and widespread goldenrod, is found in a variety of upland habitats. It reaches heights of three to four feet and has golden flower heads on the ends of the stems in the fall. Pinebarren goldenrod is deciduous. It has low salt tolerance and grows best in nutrient-poor soils. It spreads by rhizomes and can be aggressive, covering large areas. It is also best used in natural areas and wildflower gardens and can serve as a screen, but may not be the best choice for small landscaped areas.

Goldenrods are some of our best fall pollinator plants but have gotten an undeserved reputation for causing fall allergies because they bloom about the same time as the real hay fever culprit, ragweed, whose pollen is widespread.

Planting and care of Seaside Goldenrod in landscapes
<a href="https://flawildflowers.org/resources/pdfs/Publications/SeasideGoldenrod.pdf">https://flawildflowers.org/resources/pdfs/Publications/SeasideGoldenrod.pdf</a>
Ragweed vs. Goldenrod Clearing The Confusion For Allergy Sufferers
<a href="https://sfyl.ifas.ufl.edu/media/sfylifasufledu/baker/docs/pdf/horticulture/Ragweedvs.Goldenrod\_000.pdf">https://sfyl.ifas.ufl.edu/media/sfylifasufledu/baker/docs/pdf/horticulture/Ragweedvs.Goldenrod\_000.pdf</a>



# Oct 5

#### 2019 Master Gardener Plant Fair 8AM to 1PM 1303 17<sup>th</sup> St. W. Palmetto We've Got a Good Thing Growing!

Date	Time	Event
2 <sup>nd</sup> & 4 <sup>th</sup> Saturday	10:00 a.m1:00 p.m.	Ask a Master Gardener Volunteer – 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.m1:00 p.m.	Ask a Master Gardener Volunteer – 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.
3 <sup>rd</sup> Saturday	11:30 a.m2:30 p.m.	Ask a Master Gardener Volunteer – Central Library – 1301 Barcarrota Blvd. W., Bradenton. Visit the Extension Master Gardener information table and get answers to your gardening questions
Friday October 4	11:00 a.m1:00 p.m.	<b>Seed-Saving Workshop</b> - Have you ever thought about saving seeds from your favorite vegetables? Join us for this two-hour workshop about seed saving strategies. Topics will include plant mating systems, isolation techniques, seed processing, and more! \$5 in advance or \$8 at the <b>door</b> . Register online at <a href="http://uf-ifas-extension-manatee.eventbrite.com/">http://uf-ifas-extension-manatee.eventbrite.com/</a> or contact, Mack Lessig, at (941) 722-4524.
Friday October 11	11:00 a.m1:00 p.m. Or 5:30 p.m7:30 p.m.	Vegetable Gardening in Central Florida - Are you struggling to grow vegetables in our wonderful Florida climate? Have you almost given up hope on growing anything? Well, worry no longer! Join us for the first part in our new vegetable gardening series. This series is designed to provide you with information, tips, and tricks to grow a successful vegetable garden. Topics for the first session will focus on the basics of vegetable gardening in Florida. \$5 in advance or \$8 at door. Register online at <a href="http://uf-ifas-extension-manatee.eventbrite.com/">http://uf-ifas-extension-manatee.eventbrite.com/</a> or contact, Mack Lessig, at (941) 722-4524.
Saturday October 12	9:00-11:00 a.m.	Extension Master Gardener Plant ID Tour – Emerson Point Preserve - Stroll through Emerson Point Preserve to learn more about Florida's native plants and inhabitants of a coastal habitat. Suitable for all ages. Call the Extension Master Gardeners to register (941) 722-4524.
Saturday October 12	10:00 a.mNoon	Palm Care for Homeowners - Most likely you have a palm in your yard, but do you know how to manage it? Most palms need specialized care in home landscapes. Come learn best practices for fertilization, pruning, and disease prevention. \$5 in advance or \$8 at the door. Register online at <a href="http://uf-ifas-extension-manatee.eventbrite.com/">http://uf-ifas-extension-manatee.eventbrite.com/</a> or call the Extension Master Gardener Volunteers (941) 722-4524.
Saturday October 19	9:00-11:00 a.m.	<b>Extension Master Gardener Plant ID Tour – Rye Preserve -</b> Take a hike through upland habitats along Rye Branch and learn about Florida native plants, natural history, and early settlement of the area. Drinking water, sturdy shoes, and hiking sticks are recommended. Visitor Center open 9am-noon and 1-4pm. Call the Extension Master Gardeners to register (941) 722-4524.
Saturday October 19	10:00- Noon	Growing Roses in Central Florida - Stop and smell the roses at our workshop devoted to growing roses in your Florida yard! Participants will learn how to select and care for rose varieties suited to our area. Included is a visit to the Master Gardeners' Rose Demonstration Garden to emphasize some lessons learned and practical observations. \$5 in advance or \$8 at door. Register online at <a href="http://uf-ifasextension-manatee.eventbrite.com/">http://uf-ifasextension-manatee.eventbrite.com/</a> or call the Extension Master Gardener Volunteers (941) 722-4524.
Saturday October 26	12:30 p.m2:30 p.m.	Outdoor Container Gardening - Learn the basics of putting together the components of successful outdoor container gardens with some upcycling ideas that may inspire you to repurpose ordinary, old items into beautiful planters. This workshop will include a tour of our Master Gardener's demonstration garden to highlight the upcycled planters we feature there. \$5 advance registration fee or \$8 at the door. Register online at <a href="http://uf-ifas-extension-manatee.eventbrite.com/">http://uf-ifas-extension-manatee.eventbrite.com/</a> or call the Extension Master Gardener Volunteers (941) 722-4524.

**UF** IFAS Extension



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