

FLORIDA

TURF DIGEST

FLORIDA
TURFGRASS
ASSOCIATION

VOL. 41 / NO. 3

Spring 2023

Managing Multiple Parks & Recreation Properties...

...without losing your mind!



ALSO IN THIS ISSUE:

CEU Round Up

Bonnet Springs Park

Tribute to Mac Carraway

Focus on Disease: Lethal Viral Necrosis

How Much Water Am I Using to Irrigate My Yard?

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- Bill Hoffer, Head Groundskeeper - Orlando City

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FLORIDA TURF DIGEST

FLORIDA TURFGRASS ASSOCIATION

Spring 2023
VOL. 41 / NO. 3

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FTGA MEMBERSHIP

The Florida Turfgrass Association is committed to provide services, communications and networking opportunities for professionals in and associated with the turfgrass industry.

Florida ranks No. 1 in the nation for turfgrass-related economic activity, with total revenues estimated at \$7.82 billion and a total employment of more than 173,000 jobs. Today, the FTGA continues to advocate for and promote the turfgrass industry with extensive research, continuing education and opportunities for turfgrass professionals to network with their colleagues.

MEMBER BENEFITS INCLUDE

- Florida Turf Digest Magazine
- Membership Directory & Industry Guide
- E-Newsletter Industry Alerts
- Annual Conference
- Regional Turf Seminars
- Legacy Scholarship

**BECOME
A NEW
MEMBER
TODAY!**



INDUSTRY CALENDAR

JUNE

21 Gulf Coast Turfgrass Expo & Field Day

JULY

- 19** CEU Round Up - Session 1
- 20** CEU Round Up - Session 2
- 26** CEU Round Up - Session 3
- 27** CEU Round Up - Session 4

AUGUST

- 24** Jeff Hayden Memorial Envirotron Golf Classic
- 27** Florida Everglades GCSAA 31st Annual Spring Symposium

NOVEMBER

27-30 FTGA 70th Annual Conference

**FOR UPDATED
INFORMATION, VISIT**



https://www.ftga.org/events/event_list.asp

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Jason Frank
FTGA President

A New Chapter

In the last message we talked about resilience. We were coming off three years of particularly challenging times one way or the other, but we didn't let it keep us down. Additionally, we did not formally announce at the time, we also had our interim executive director, Mac Carraway, retire at the end of the year in 2022. Although this created an additional challenge, we appreciated Mac's commitment to the industry to help step up for as long as he could, and it was well deserved and not totally by surprise when he decided he was ready to fully retire. Mac had done an excellent job of formally writing out his duties and commitments to the association, so this really gave a head start to prepare for what we wanted to do next. As a board of directors (BOD), we quickly got to work, as we all understood the role that Mac played in keeping us all rowing the same direction. Below, we outline the steps we have taken to reorganize, refocus and move forward with a new chapter of the FTGA. The pandemic and the hurricanes are behind us, and Mac has left us in a great position.

- We first reviewed our strategic planning meeting from a couple of years ago to make sure we had a clear direction of where we wanted to go.
 - We produced a summary of our mission and vision statements as follows:
 - To be a **PARTNER** to green industry associations and serve as a conduit to support **advocacy, communication, education, networking and research** to promote the **long-term sustainability** of the green industry in Florida.
- Once we knew the direction and how we wanted to serve, the next step was to decide how we wanted the FTGA to be structured. Did we have to have an executive director? We have an extraordinarily strong association manager, so we decided in the interim we were going to reorganize the BOD to take on the responsibilities of the executive director function until we could decide the best path forward. We quickly analyzed all the functions Mac performed as executive director and worked to reallocate those responsibilities to the president, vice president, secretary/treasurer, association manager, committee chairs, and BOD members as every position now will play an even more crucial role in the success of the overall association.
- PARTNERING with the green industry in Florida:
 - We have set up meetings and work to reach out to other green industry associations to share our vision and how to best be the partner we all desire.
 - Our long-term goal is to have equal representation from all facets of the industry represented on the BOD.
- Advocacy:
 - We feel advocacy is extremely important. It always has been, but in today's political climate, it is even more important that we get our message across regarding the science we use to make decisions that support the environment and manage our facilities.
 - Also, we understand advocacy does not always mean governmental solicitation.
 - Advocating to the next generation of turfgrass industry professionals.
 - Advocating to the broader population the benefits of turfgrass.
 - Marketing the updated Economic Impact Study.
 - Our goal this year is to come out with a clear direction of what the next best steps will be in the future.
- Communication
 - The magazine previously focused on one category (golf, sports turf, landscape, sod) each quarter. We will now represent each category in every issue to promote more frequent and better communication of what is occurring across the entire industry.
 - We are also working to rebrand logo to be a reflection of our strategic path forward.
 - We are focusing on a broader and more frequent social media presence to create greater awareness of our industry in this space.
- Education
 - Education has always been the backbone of the FTGA.
 - We educated 681 participants in our spring turf seminars.
 - The summer CEU Round Up offers mid-year education.
 - We are committed to having great education at our annual conference.
- Networking
 - This year the 70th Annual FTGA Conference will be hosted at The Omni ChampionsGate November 27–30, 2023.
 - We look to expand the format of the Corn Boil to include a BBQ Cook-Off with some of our sponsors as well as sponsor interaction at the event. We have an extremely exciting space to host this, and we look forward to how it will turn out.
 - And do not forget the annual corn hole tournament!
- Research
 - Every January we are delighted to be able to partner with the Central Florida GCSA chapter to support the Stuart Leventhal, CGCS, Turfgrass Research Tournament and raise money for research in Florida.
 - This year we were able to fund Dr. Kevin Kenworthy (UF) on research for lethal necrosis virus and look forward to the findings and how they can help turfgrass professionals in Florida.

Long Term Sustainability

We feel like we have accomplished a lot in a brief time and made the best out of the circumstances we were given. We thank all the professionals in the industry for continuing to give us a chance to bring the value of being a partner. Most importantly, we want to thank Mac Carraway for all his dedication to our industry and the FTGA over the years. We would not have been able to transition as quickly as we have without him leaving us with a great template to work from, and we look forward to continuing to grow our objectives for the betterment of everyone in the turfgrass industry. 🌱

2023 ASSOCIATION PARTNERS

PRESENTING



PLATINUM



GOLD



SILVER



BRONZE



ASSOCIATION PARTNERS PROGRAM

PRESENTING PARTNER \$17,000

- Membership** up to 20 members
- Turf Seminar** table at each location
- Annual Conference** up to 4 members
 - 1 Golf Foursome
 - Annual Meeting Lunches
 - Corn Boil Tickets
 - Opening Reception Tickets
 - Logo on brochures, signage, notepads, lanyards, golf tee sign
 - Golf Tent & Vendor Table
- Advertising** recognition every issue
 - 5 Full Page Print Ads
 - 3 e-Newsletter Banner Ads
 - Each Month Social Media Post
- Webinars** logo recognition in presentation
- Website** logo on home page recognition
- Advocacy** participation on Legislative Day Support lobbying firm

GOLD PARTNER \$8,500

- Membership** up to 5 members
- Turf Seminar** table at each location
- Annual Conference** up to 2 members
 - Annual Meeting Lunches
 - Corn Boil Tickets
 - Opening Reception Tickets
 - Logo on specific item
- Advertising** recognition every issue
 - 5 1/2-Page Print Ads
 - Each Month Social Media Post
- Webinars** logo recognition in presentation
- Website** logo on home page recognition
- Advocacy** participation on Legislative Day Support lobbying firm

BRONZE PARTNER \$2,500

- Membership** up to 2 members
- Turf Seminar** table at each location
- Annual Conference** up to 1 member
 - Annual Meeting Lunch
 - Corn Boil Tickets
 - Opening Reception Ticket
 - Logo on specific item
- Advertising** recognition every issue
 - Each Month Social Media Post
- Webinars** logo recognition in presentation
- Website** logo on home page recognition
- Advocacy** participation on Legislative Day Support lobbying firm

PLATINUM PARTNER \$12,000

- Membership** up to 10 members
- Turf Seminar** table at each location
- Annual Conference** up to 3 members
 - 1 Golf Foursome
 - Annual Meeting Lunches
 - Corn Boil Tickets
 - Opening Reception Tickets
 - Logo on specific item
 - Golf Tent & Vendor Table
- Advertising** recognition every issue
 - 4 Full Page Print Ads
 - Each Month Social Media Post
- Webinars** logo recognition in presentation
- Website** logo on home page recognition
- Advocacy** participation on Legislative Day Support lobbying firm

SILVER PARTNER \$5,500

- Membership** up to 3 members
- Turf Seminar** table at each location
- Annual Conference** up to 2 members
 - Annual Meeting Lunches
 - Corn Boil Tickets
 - Opening Reception Tickets
 - Logo on specific item
- Advertising** recognition every issue
 - 3 1/3-Page Print Ads
 - Each Month Social Media Post
- Webinars** logo recognition in presentation
- Website** logo on home page recognition
- Advocacy** participation on Legislative Day Support lobbying firm

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Managing Multiple Parks & Recreation Properties...

...without losing your mind!

By **Donnie Rowland**, Apopka Parks Superintendent

City of Apopka's Toro® HDX
Workman GPS paint machine.

Editor's Note: The majority of our athletic field turf professionals work in the "parks and rec" arena, often managing multiple fields along with grounds and building maintenance, juggling staff and working within strict budgets. Donnie Rowland manages one of Florida's largest natural-turf sports complexes and presents a case study on squeezing every ounce of limited resources to get the job done.

After starting as an entry-level groundskeeper for the City of Altamonte Springs, 24 years ago, I started as a foreman at the Northwest Recreational Complex in the City of Apopka six year ago. In 2020, I became the park superintendent for the city's properties. I have learned that the ability to juggle, "adaptability" in corporate-speak, is one the most important traits for anyone managing a large complex and/or multiple facilities.

THE APOPKA PARKS

Under my direction, the crews maintain the Northwest Recreational Complex of 300+ acres (12 baseball-softball combination fields and 16 soccer/multipurpose fields (52 acres of playing surface), all 14 city buildings and five smaller parks. I have a five-man crew that works solely on the ballfields, and eight men comprise our common-area mow crew for the entire city. The cemetery crew and the trash and debris clean-up crews each have two individuals assigned to them. Our full-time irrigation crew member ensures the entire complex is irrigated properly and maintains the system. The ballfield crew works Sunday through Thursday and Tuesday through Saturday to cover the weekend tournaments.

PUBLIC ACTIVITIES

Except for scheduled field maintenance shutdowns, we run a full-to-overflowing, year-round schedule.

The Northwest Recreational Complex activities and tournaments include:

- 45 scheduled baseball/softball tournaments.
- 5 lacrosse tournaments.
- 4 football tournaments.
- Pop Warner from August 1 through mid-December.
- 16 soccer tournaments.
- Little League from February through July and September through November.

Recreation and Entertainment Programs include:

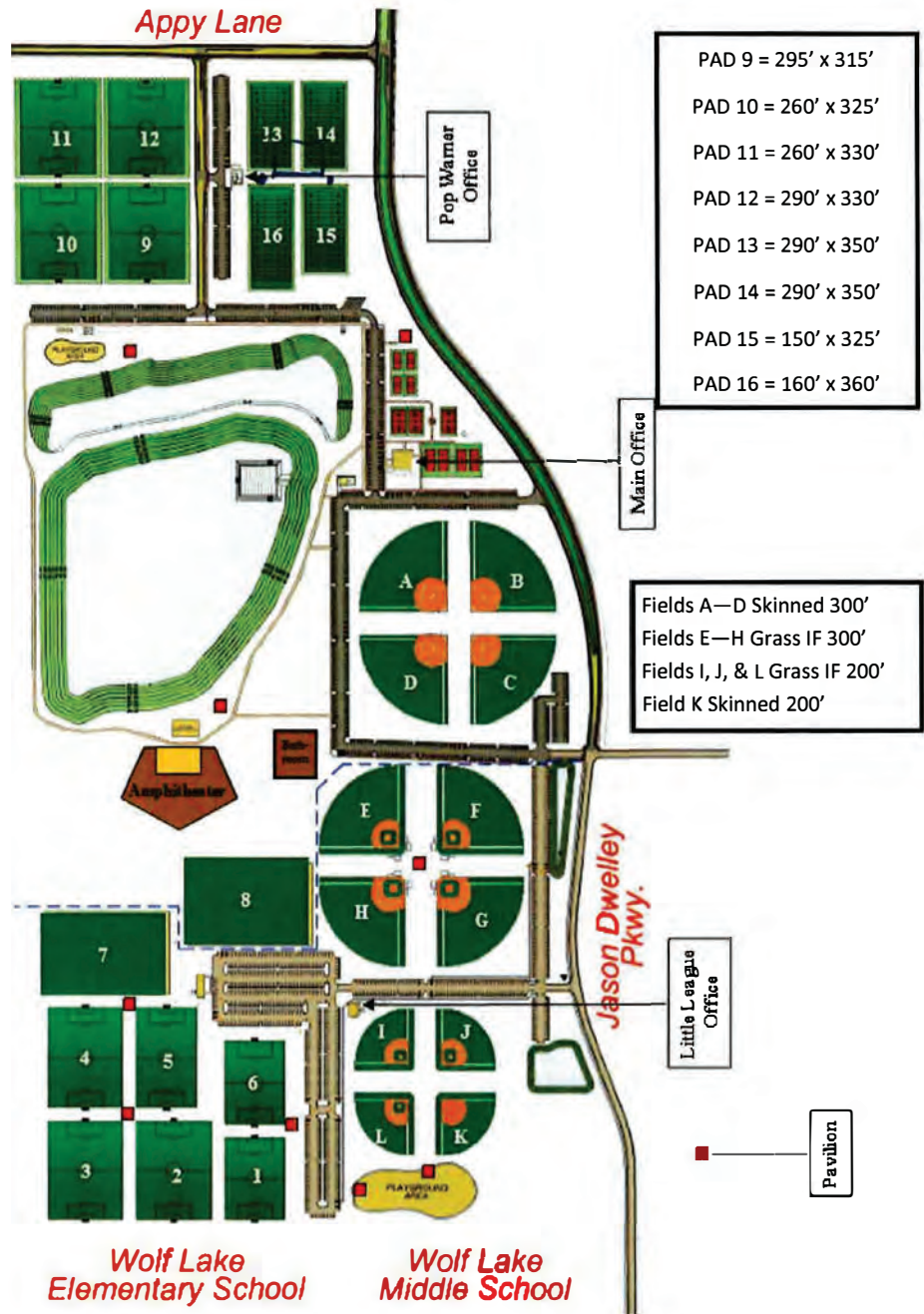
- Soccer—850 kids in our spring program and 745 in last year’s fall program.
- Flag football—447 kids.
- Men’s softball teams consist of three, 10-week seasons.
- Baseball and softball fields—rented out five days a week all year except during maintenance shutdowns.
- Amphitheater—hosts an average of 24 concerts a year with around 200,000 people in attendance throughout the season.

MULTI-PURPOSE PADS

At times we have lacrosse, full soccer and three-player soccer fields for young children all on the same pad. We are constantly filling holes on the baseball fields and pads. We try to rotate our fields or shift them on the pads to help keep the worn or troubled areas to a minimum. Very rarely have we had to shut down a field because it was not safe for play.

TURFGRASS MAINTENANCE

Weather usually isn’t an issue because our fields drain well. However, tournament games shift to our facility after a heavy rainfall because our fields remain playable when other parks are



PAD 9 = 295' x 315'
PAD 10 = 260' x 325'
PAD 11 = 260' x 330'
PAD 12 = 290' x 330'
PAD 13 = 290' x 350'
PAD 14 = 290' x 350'
PAD 15 = 150' x 325'
PAD 16 = 160' x 360'

Fields A—D Skinned 300'
Fields E—H Grass IF 300'
Fields I, J, & L Grass IF 200'
Field K Skinned 200'

PAD 1 = 235' x 280'	PAD 2 = 270' x 330'	PAD 3 = 270' x 330'	PAD 4 = 260' x 330'
PAD 5 = 220' x 330'	PAD 6 = 230' x 290'	PAD 7 = 280' x 395'	PAD 8 = 285' x 385'



Proposed new fields (far right) at the Northwest Recreation Complex.

flooded. That injects a wildcard into our schedule. During the week, it can be an issue when we are scheduled to paint, prep fields or mow the complex. During those times, we must rearrange priorities and whatever needs the most attention gets done first. Prioritizing works together with adaptability.

In addition to aerating our fields twice a year, we slice them, when possible, sometimes two to three times a year. One of the biggest issues is soil compaction. Our fertilizer is a specialty blend for our turf with minors such as magnesium, calcium, etc., included.

Five years ago, we stopped our ryegrass application because of issues during the spring. I was always concerned with the amount of play at our complex—worried that there would not be any bermudagrass turf underneath once the rye transitioned out in the early summer—and my worry was justified.

We had issues with mole crickets, fungus, weeds and completely worn areas with ryegrass. We had to close our fields to re-sod almost half a pad because they were not playable. Poa anna and goosegrass were our biggest issues as far as weeds. Our poa anna became resistant to a few chemicals, and the goosegrass was also resistant to certain herbicides.

With no rye on the ground, we can use a pre-emergent to keep these issues at a minimum. Since we began top dressing our fields and pads with a Comand compost product the past few years, we have not had an issue with fungus either. This has also helped immensely with our bermudagrass mites, and overall, the turf really responds well to the product.

SCHEDULED MAINTENANCE SHUTDOWNS

With our tight activity calendar, scheduled shutdowns are critical to allow the fields to rest and recover from constant play. For three weeks during June and July as well as for three weeks in November and December, we close our baseball and softball fields for scheduled maintenance. This is not enough rest for the pads and fields, but it's all the schedule allows.

Our summer shutdown requires staggering the fields: It consists of shutting down Pads 1–8 from May 31 through July 4, Pads 9–16 from June 27 through July 31, Quad 1 from June 24 through July 9, Quad 2 from July 15 through July 30 and Quad 3 from August 5 through August 20. All major maintenance activities must be scheduled around these shutdowns.

This year will be a little more challenging in terms of scheduling as it's the first year we will have a winter shutdown. We will close our facility to outside groups from November 20, 2023, through February 1, 2024; however, we will still host our baseball tournaments and recreational flag football league.

INJURIES TO THE FIELDS

Kids are always digging holes in the fields, and the goal mouths are a big issue. We try to replace the goal mouths when needed, but this year we have experimented with TifTuff bermudagrass in some of these areas. We are hopeful it will bounce back after the seasons to save on turf cost. Our foul lines wear out from kids warming up on the line, so we



City of Apopka Grounds Team

are going to paint a blue line 10 feet from the foul line and encourage them to line up there instead of on the foul line.

EQUIPMENT

Our mowers are large. We have a Toro 4300 for the baseball-softball fields and a Progressive pull behind with a 14-foot deck for the soccer pads. Our best purchase and favorite piece of equipment is our new Traqology Turf Tech GPS paint machine. It mounts in the back of one of our carts, and we can paint a full soccer field from scratch to finish in 20 minutes, making it easy for us to shift the fields at a moment's notice while using one third of the paint we previously used. Most of the time we have multiple colored fields on one pad. Our ABI unit helps us laser our baseball-softball fields.

OUR THREE GREATEST CHALLENGES

There are many challenges in running huge facilities, but our three biggest ones are repairing holes dug by the kids, scheduling and budgeting.

HOLY MOLY, HOLES GALORE

With the number of tournaments we host, holes dug by the kids in the outfield present a weekly challenge. The crew rides the fields every Monday and fills depressions and holes with sand. If the areas are too large to regrow on their own, we re-sod the areas during our June shutdown period. We have had to close fields due to too much wear and tear, which causes an issue with the teams scheduled to practice every night. I work closely with Recreation Manager Rhonda Cline on rotating fields. She is always willing to do whatever is necessary to move teams to keep the fields in a safe, playable condition.

THE SCHEDULING JUGGLE

We are fully staffed only on Tuesday, Wednesday and Thursday due to crews covering the weekend tournament shifts—and then, with only five staff members covering the fields and soccer

pads. Our summertime schedule looks like this:

1. One staff drags all 12 fields daily to look for any issues that may have cropped up the previous day.
2. Two employees mow all 16 fields three days a week.
3. Two employees mow the 12 baseball and softball fields on Monday, Wednesday and Friday.
4. Two employees mow the commons on Tuesday and Thursday.
5. One staff member lasers the ballfields with the ABI machine Tuesday and Thursday.
6. One employee paints all fields needed for the week on Thursday.
7. Our full-time irrigation person performs weekly irrigation checks looking for heads not rotating or blowouts. We have too many zones to water everything in one night, so we stagger the run times. Mondays, Wednesdays and Fridays we irrigate the baseball and softball fields and commons. Sundays, Tuesdays and Thursdays, we water the soccer pads.

We also renovate lips, add clay or conditioner to the fields as needed on Tuesdays and Thursdays. I believe in topdressing and slicing—aerating as much as possible—and at a minimum, slicing quarterly.

Scheduling staff can often be an issue because something always comes up. My two foremen do a great job with assisting and working together on sliding and shifting staff where needed. One week they could be mowing city hall; the next week, they could be edging a ballfield. With as many variables as we deal with, we couldn't run our operation without a fully cross-trained staff.

THE BUDGET JUGGLE

The greatest plus is having your director, mayor and council understand what it takes to make the fields and facilities safe as well as keeping them beautiful for the enjoyment of the people who use them. That is a big help when we work up

our annual budgets. Still, budgeting is always ‘interesting,’ even more so since the pandemic. Prices on everything have soared as you have seen in your own business.

The company we contract for fertilization and herbicide and pest treatments has done an amazing job keeping us weed and pest free and maintaining strong root systems. Contracting services for treatments takes a lot of pressure off the crews and me. Our poa anna is resistant to Revolver and Barricade Pre-emergent, and the contractors have done a good job with changing the mode of action as necessary and keeping the fields clean. Contracting these services has been beneficial not only in time savings but also in cost savings since we don’t have to hire additional crew members for occasional applications. We estimate a savings of two crew members by contracting these services.

My clay budget, alone, has doubled. The past few years, we have had Chipco injected into the soil, and that has been a huge help with the mole crickets. Even though our bermudagrass mites have diminished, they are still an issue in some areas.

Sometimes a large outlay of discretionary capital makes sense. Last year we made one of our best-ever purchases from a financial standpoint—the GPS paint machine mentioned above. Previously, it took two people

2.5 hours and 10 gallons of paint. Now, it’s a one-person, 15–20-minute operation using only three gallons of paint. The savings add up quickly. Last year, we cut the paint quantity in half, saving more than \$10,000. The savings will be even more dramatic over what we would pay for paint now that prices are increasing rapidly.

FINAL WORD

There is nothing “set it and forget it” about running a parks-and-rec operation of any size because of the many variables that can upset the plan with little notice. If you look at how we manage our operation to the utmost on a skeleton crew, I hope it will give you some ideas that you can scale to suit your operation. 🌱



Donnie Rowland is superintendent of the City of Apopka Parks and Recreation. He began his career as an entry level groundskeeper For the City of Altamonte Springs, working his way up to turf specialist over his 18-year tenure there. Six years ago, he moved to the Apopka Parks and Recreation Department, where he currently serves as park superintendent.

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What's New with the Florida Gateway College Turf Programs?

The Florida Gateway College (FGC; formerly Lake City Community College) Turf Program never went away. It now offers two online programs and will offer two on-campus classes beginning in the fall.

Instructor Erik (William) Smith says, "We have three online programs currently here at FGC. We have the Horticulture Certificate, Advanced Horticulture Certificate, and the AS in Agribusiness Management. We also have workforce courses which are for those who want a non-college credit certificate. The workforce courses are offered in English and Spanish. All are offered completely online. We also have many scholarship opportunities for these programs. For the first time in years, I will have two face-to-face classes in the fall which is very exciting."

The *Horticulture and Advanced Horticulture Programs* with an emphasis in turfgrass is the entry-level course of study. This certificate program consists of six online classes and equips students with the foundation to enter the Agribusiness Management degree.

The *Agribusiness Management Program* enables students to pursue and further a career in golf course operations, landscaping, nursery management, sports turf and other agricultural sectors. The program consists of 10 classes, and after completion, students can earn an associate degree by completing 10 more classes.

All instructors have a minimum of master's degrees from the University of Florida and other colleges and universities. They are employed, or have been employed, in the fields of soil science, nematology, and golf course industries, etc.

"The admissions process is easy and straightforward; just fill out our free online admissions application on our website, and provide us with your official high school or GED transcripts as well as college transcripts if you have attended other colleges before, says Recruiter Brian Lloyd."

Visit the website at <https://www.fgc.edu>, and follow the FGC Twitter feed at <https://twitter.com/FGCollege>.

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CEU Round Up

This year's CEU Round Up will be held on Zoom. Each session runs three hours. Each session description is listed below along with its approved CEUs from FDACS, FNGLA and GCSAA.



Register online at <https://www.ftga.org/page/CEURoundUp>

Note: These webinars do NOT offer certification on the Roundup weed killer products.

TIME	PRICING INFORMATION	REGISTRATION
12:00 pm - 3:00 pm CST 1:00 pm - 4:00 pm EST	FTGA Member: \$30 per webinar/per person Non-FTGA Member: \$60 per webinar/per person	Register online at https://www.ftga.org/page/CEURoundUp

Session 1 | July 19

Pesticide Resistance Management by *Bonnie Wells, DPM, University of Florida*

More than 600 pest species worldwide have developed some level of resistance to pesticides thereby reducing the options available for their management. This presentation will improve the understanding of pesticide resistance by covering the impacts of herbicide, fungicide and insecticide resistance in weeds, fungi and insects. Management strategies to prevent pesticide resistance will be outlined in detail.

Pesticides & the Environment by *Mark Tancig, UFIFAS Leon County*

In this presentation, we will discuss pesticide characteristics and environmental factors that impact the fate of pesticides in the environment and what effects pesticides can have on non-target sites and organisms.

Drift Management: Principles, Best Practices & Developing a Drift Management Plan

by *Susan Haddock, UFIFAS Hillsborough County*

This presentation will provide an understanding of drift, factors that influence drift, product label drift management instructions, and drift management plans.

APPROVED CEUS:

FDACS (3 in each category): 482 CORE; 487 CORE

FNGLA: 1

GCSAA: 0.30

Session 2 | July 20

Ensuring Quality Turf Through Weed Control in Florida by *Dr. Pawel Petelewicz, University of Florida*

This presentation will focus on holistic strategies to address troublesome and/or common weeds that occur in warm-season turfgrass environments. Content will include the identification and biology of important weed species, as well as currently available options for their control—both cultural and chemical. This presentation will embrace the principles of IPM and herbicide resistance management as well as the importance of proper turfgrass management practices, aiming to enhance weed control efficacy and reduce environmental impacts. Updates on research conducted at the University of Florida will be included.

Diagnosis & Management of Troublesome Turf Diseases by *Dr. Phil Harmon, University of Florida*

The presentation will focus on turfgrass diseases that are commonly diagnosed in Florida. Participants will learn how to recognize early symptoms of disease and how to differentiate those from abiotic stress problems. Research-based management options for the most problematic diseases will be reviewed with emphasis on chemical and agronomic input options.

Ornamental Plant Nutrient Deficiencies by Susan Haddock, UFIFAS Hillsborough County

This presentation will provide an understanding of the factors that influence the availability of plant nutrients, recognizing nutrient deficiencies, the role of soil testing and how to correct nutrient deficiencies.

APPROVED CEUS:**FDACS (3 in each category)**

Private Applicator Ag; Ornamental & Turf; Limited Urban Fertilizer; Ltd Landscape Maintenance; Ltd Lawn & Ornamental; Comm. Lawn & Ornamental

FNGLA: 1

GCSAA: 0.30

Session 3 | July 26**Optimal Management Strategies for CitraBlue St. Augustinegrass** by Alejandra Sierra, University of Florida

CitraBlue is the newest St. Augustinegrass cultivar developed at University of Florida. This presentation will highlight optimal management practices for this cultivar with a focus on fertilization, mowing height and dethatching techniques for North, Central and South Florida. Additionally, we will discuss the instatement of blackout periods, how to select fertilizer type based on these restrictions and how our research aims to quantify the impact these policies have on CitraBlue.

Hangry Plant by Hannah Wooten UFIFAS Orange County

The presentation will cover the following topics the basic needs of plants as it relates to growing healthy plants; an overview of hangry plants and distinguishing between symptoms of different plant problems include nutrient deficiencies and how these symptoms differ from plants pests and pathogens; the qualities of fertilizer; plant nutrition; the environmental pollution and impacts on plants from fertilizer and pesticide use; how to use the right plant, right place as prevention of plant problems, pests and pathogens; when and how to fertilize and follow fertilizer laws and licensure requirements for application of products.

Potentially Reduce Fertilizer Inputs for Turfgrass Management by Dr. AJ Lindsey, University of Florida

Sustainable and environmentally friendly management practices have garnered much interest within the turfgrass industry and the general public. Additionally, fertilizer restrictions also have the potential to change and dictate management practices. This presentation covers some of the recent research trials conducted with soil amendments and alternative fertilizers. It will also explore how these can be incorporated into management practices to reduce overall fertilizer use and potential nutrient losses to the environment.

APPROVED CEUS:

FDACS (2 in each category): Limited Urban Fertilizer

FNGLA: 1

GCSAA: 0.30

Session 4 | July 27**Lake Shoreline & Littoral Shelf Plant Management** by Bonnie Wells, DPM UFIFAS Brevard County

There are many freshwater lakes and ponds throughout Florida's landscapes. Management of the land in the watersheds that surround lakes and ponds greatly affects the health of the overall ecosystem. This presentation will discuss the four main ecological zones of lakes and ponds and outline the best management practices to maintain a healthy lake. Littoral shelf plant management will be a focus, as plants are vital to the functioning of lakes and ponds, serving many benefits, including oxygen production, sediment stabilization and wildlife habitat. Management of nutrient concentrations, dissolved oxygen and algal populations will also be discussed.

Identifying Turf Weeds by Michelle Atkinson, UFIFAS Manatee County

There are many resources available to help you identify weeds in the field. This presentation will introduce new and existing resources that can help applicators identify weeds and find recommendations for their control.

Aquatic Plants of North Florida by Mark Tancig, UFIFAS Leon County

Managing aquatic weeds starts with an ID of the plants in the waterways. Join us to review aquatic plant management techniques and learn how to identify a range of common aquatic plants of north Florida.

APPROVED CEUS:

FDACS (3 in each category): Aquatic Weed Control; Natural Areas Weed Management; Right-of-Way

FNGLA: 1

GCSAA: 0.30



How Much Water Am I Using to Irrigate My Yard?

By **Nicholas Taylor, Ph.D.**, state specialized agent, Program for Resource Efficient Communities; **Kaitlin Robb Price**, H₂OSAV project manager, Program for Resource Efficient Communities, Department of Agricultural and Biological Engineering; and **Bradley Spatz**, data scientist, H₂OSAV, Program for Resource Efficient Communities

This article is a reproduction of EDIS publication #AE585, <https://edis.ifas.ufl.edu/publication/AE585>.

Florida is known for its abundant springs, rivers, and lakes, but the state is facing a water crisis. By 2070, development-related water demand is projected to more than double to 6.5 billion gallons per day from the 2010 baseline of 3.1 billion gallons per day (UF Geoplan Center 2016). While the EPA estimates that outdoor water use accounts for 30% of household use nationally (Environmental Protection Agency 2022), research shows that some homes in Florida are using significantly more than this. In some counties, the highest water users spend 60–70% of their total water use for irrigation (Taylor et al. 2021; Taylor et al. 2022).

UF/IFAS research shows that common issues with irrigation systems include timers being set to water too frequently and/or for too long (Olmstead and Dukes 2020). Florida homeowners with high water use who are looking to save water and save money on their water bill should first look to see if they can reduce their outdoor water use. The goal of this publication is to help readers understand the magnitude of water used for a single irrigation event and encourage them to evaluate their outdoor water use.

HOW MUCH WATER IS USED PER IRRIGATION CYCLE?

This study used county property appraisal data for 1,162,401 homes in Florida to estimate the typical irrigated landscape area. This data represents 22% of the 5,231,740 single-family, detached homes in Florida (as estimated by the United States Census Bureau).

It takes 0.62337 gallons of water to cover one square foot with one inch of water. With this constant, the following formula was used to calculate water use per irrigation cycle:

$$0.62337 \times \text{irrigated area} \times \text{irrigation depth} = \text{water use per irrigation cycle}$$

For the homes in this study, the average lot size is 8,079 square feet with an average yard size of 6,359 square feet. After taking into consideration sidewalks, driveways, and non-irrigated parts of a landscape, we conservatively assumed that a home might irrigate half their yard. With that assumption, a home in Florida would irrigate an average of 3,179 square feet. Following UF/IFAS recommendations of 1/2" irrigation depth (Trenholm et al. 2013), the average home would use at least 991 gallons of water each time they watered their yard (see Table 1). This is a conservative estimate, as this calculation assumes that the irrigation system is 100% efficient. However, no system is perfectly efficient, and research shows that typical irrigation system efficiency is

40–50% (Cardenas et al. 2021). The *minimum* water use per irrigation event would be 991 gallons, but a typical system could use more than double this conservative estimate. The only way to use less than 991 gallons of water would be to irrigate a smaller area or to apply less than 1/2" of water.

CALCULATION INPUTS:

- Lot size – 0.18547 acres/8,079 square feet
- Home size – 1,720 square feet
- Yard size – 6,359 square feet
- Percent of yard irrigated – 50%
- Irrigated area – 3,179 square feet
- Irrigation constants – 0.62337 gallons/sq ft-inch
- Recommended irrigation depth – 0.5 inch per cycle

$$0.62337 \text{ gallons/sq ft} - \text{in} \times 3179 \text{ sq ft} \times 0.5 \text{ in} = 991 \text{ gallons per irrigation cycle}$$

SAVING FLORIDA'S WATER

We all have a part to play in protecting Florida's water. Most homes that irrigate their landscapes do so with potable water, the same supply they use for drinking, bathing, and cooking. As Florida's population and water crisis grows, so will the need to find ways to conserve our potable water supply. Below are a few of the UF/IFAS best practices to help homeowners reduce overwatering and reduce their impact to Florida's water supply (Dukes 2020).

Saving Water in an Existing Landscape

Only water your lawn when it needs it. Overwatering can increase weeds and reduce drought tolerance (Trenholm et al. 2013). "Watering Your Florida Lawn (EDIS #ENH9)" shares a few signs to look for before you water. The signs include leaf blades that are folded in half, grass with a blue-gray tint instead of green, and footprints in the grass that remain visible for a long time (Trenholm et al. 2013).

Remember to check your local watering restrictions before irrigating. If you choose to irrigate, the Urban Irrigation Scheduler is an easy-to-use resource (https://fawn.ifas.ufl.edu/tools/urban_irrigation/). It is Florida law that irrigation systems must have a working rain sensor device, and you can learn more about rain sensors in the EDIS publication "Residential Irrigation System Rainfall Shutoff Devices, or Rain Sensors (EDIS #AE221)." If you'd like to go a step further, you can install a smart irrigation device. A smart irrigation device helps to avoid unnecessary irrigation events by monitoring weather or soil moisture (Dukes 2021). If you need help, some utilities or water management districts offer evaluations and

incentive programs to help you reduce your irrigation. Your local UF/IFAS Extension office is also available to help as you take steps towards reducing your water use.

Saving Water in a New Landscape

Consider reducing the amount of your landscape that needs irrigation. Irrigated area can be reduced by creating no- or low-water-use landscaped beds with mulch and drought-tolerant plants and/or by limiting in-ground irrigation to a small area in the yard. The Florida-Friendly Landscaping Program™ is a great resource to learn how to choose the Right Plant for the Right Place. Many local governments in Florida have watering restrictions that limit days of the week you can water, and exceptions for new landscapes often last only 30 to 60 days. If you do install an in-ground irrigation system in your new landscape, be sure to reset your irrigation timer after a short watering-in period and consider using a smart irrigation controller.

Data Availability Statement: Data used in this publication to calculate average lot size was provided by H₂OSAV (Water Savings, Analytics & Verification), a UF/IFAS Extension program. The program works with utility partners throughout the state of Florida to help measurably reduce water use. This study included county property appraisal data collected in 2021 from the following Florida counties:

- 💧 Alachua
- 💧 Osceola
- 💧 Sarasota
- 💧 Hillsborough
- 💧 Pasco
- 💧 Seminole
- 💧 Orange
- 💧 Pinellas
- 💧 St. Johns

Property appraisal data is open record and can be accessed through each county's property appraiser website. Census data was used to calculate the percentage of homes in Florida that this dataset represents (2020: ACS 5-Year Estimates Data Profiles), and that census data can be found here: DP04: SELECTED HOUSING CHARACTERISTICS—Census Bureau Table. 🌱

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Table 1. Water use of common household indoor appliances.

Appliance	Gallons Used per Instance	991 Gallons/Gallons Used
Bathroom faucet	2 gallons per minute	495 minutes (8.25 hours)
Old toilet	5 gallons per flush	198 flushes
WaterSense toilet	1.28 gallons per flush	774 flushes
Standard showerhead	2.5 gallons per minute	396 minutes (6.6 hours)
WaterSense showerhead	2 gallons per minute	495 minutes (8.25)
Traditional clothes washer	54 gallons per load	18 loads
High efficiency clothes washer	27 gallons per load	37 loads
Dishwasher	20 gallons per load	50 loadsw

UF IFAS Extension | **H₂OSAV** | WATER SAVINGS, ANALYTICS & VERIFICATION

How much water am I using to irrigate my yard?

In Florida, an irrigation system uses at least **991 gallons** each time the average yard is watered. That amount of water is equal to...

- Taking a WaterSense shower for **8.25 hours**
- Using your HE washing machine for **37 loads** of laundry
- Running the bathroom faucet for **8.25 hours**
- Running your dishwasher **50 times**
- Flushing a WaterSense toilet **774 times**

To learn more, visit edis.ifas.ufl.edu/AE585
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In nature, Florida's wildflowers are found in all light conditions. Many beautiful species can adapt to varying light situations in our landscapes, as well.

Heavily treed landscapes mimic conditions found under pine and hardwood canopies, creating a mix of sunny and shady spots. This provides opportunities to try a variety of wildflowers to create habitat for grateful birds and insects. Wildflowers prefer sun for best blooming potential, but filtered light will still promote flower formation, attracting butterflies and pollinator insects to your yard.



Landscaping with Florida's native wildflowers and plants provides refuge for birds, bees and butterflies while creating "habitat highways" through urban settings.

Think Diversity

Diversity is key when planning a habitat. Using the plant guide on side 2, start a list of species to consider. Select plants appropriate for your region. Include sunny-location wildflowers that can adapt to lower light levels, as well as those that spread by roots, making excellent groundcovers. Medium-size perennial and annual wildflowers can be interplanted in the same bed to create more diversity. Larger flowering shrubs make an excellent background or accent planting.

Because most vines use trees or shrubs for support, they are common in shady locations. Trellised vines can be an attractive addition to a shady landscape, but keep in mind the potential for vines to spread by underground roots.



Planting and Maintenance

Wildflowers can be planted any time of year. Be prepared to keep them watered for two to three weeks as roots establish and to water as needed during dry periods. Make sure tree roots allow plants to be installed at a depth of 6 to 12 inches so roots can develop.

There's no need to apply fertilizer or add mulch. Most shaded areas will have a natural mulch of leaves or pine needles. Adding mulch may impede drainage, causing your plants to decline.

After a season of growth and flowering, the upright stems of perennial wildflowers can be trimmed to the base. However, try to leave dried stems and leaves and delay garden cleanup until early spring to provide valuable overwintering habitat for beneficial insects.

Leave flowerheads to dry naturally and release seeds for future seedlings. Birds will also enjoy them.

Plan for Success

- Evaluate the number of hours of shade or sunlight in the area you intend to plant. Is it partly shaded, receiving two to four hours of sunlight, or fully shaded, receiving less than two hours of sun daily?
- Determine tree root interference. Wildflowers need a soil depth of 6 to 12 inches for root development.
- Remove competitive weeds, vines and grasses from the planting area.
- Check soil moisture. Does the area drain well after rain, or does it hold moisture for 12 hours or more?
- Diversity is the key for a healthy sustainable native wildflower garden. What species will you include? Do you want native grasses as well?

Common name	Scientific name	Light	Color of bloom	Bloom season	Soil moisture	Hardiness zone	Height	Pollinator/Bird use
Eastern bluestar	<i>Amsonia tabernaemontana</i>					8A-8B	2-4 ft	
Wild columbine	<i>Aquilegia canadensis</i>					8A-9A	18 in	
Green dragon	<i>Arisaema dracontium</i>					8A-9B	2-3 ft	
Pipevine	<i>Aristolochia tomentosa</i>					8A-10A	vine	
Woodland poppymallow	<i>Callirhoe papaver</i>					8A-9A	1-2 ft	
Indian woodoats	<i>Chasmanthium latifolium</i>					8A-8B	2-3 ft	
Green-and-gold	<i>Chrysogonum virginianum</i>					8A-9B	6 in	
Blue mistflower	<i>Conoclinium coelestinum</i>					8A-11	2-3 ft	
Pineland twinflower	<i>Dyschoriste angusta</i>					8A-10A	4-8 in	
Oblongleaf twinflower	<i>Dyschoriste oblongifolia</i>					8A-11	6-10 in	
Tall elephantsfoot	<i>Elephantopus elatus</i>					8A-11	2-3 ft	
Coralbean	<i>Erythrina herbacea</i>					8A-11	3-8 ft	
Dimpled troutlily	<i>Erythronium umbilicatum</i>					8A-8B	6 in	
Carolina jessamine	<i>Gelsemium sempervirens</i>					8A-10B	20 ft	
Firebush	<i>Hamelia patens</i> var. <i>patens</i>					8B-11	4-10 ft	
Woodland sunflower	<i>Helianthus strumosus</i>					8A-9A	3-6 ft	
Oakleaf hydrangea	<i>Hydrangea quercifolia</i>					8A-9B	5-10 ft	
Prairie iris	<i>Iris hexagona</i>					8A-11	2-3 ft	
Cardinalflower	<i>Lobelia cardinalis</i>					8A-10B	2-5 ft	
Coral honeysuckle	<i>Lonicera sempervirens</i>					8A-10B	vine	
Partridgeberry	<i>Mitchella repens</i>					8A-10A	1-3 in	
Golden ragwort	<i>Packera aurea</i>					8A-9B	2-3 ft	
Corkystem passionvine	<i>Passiflora suberosa</i>					8B-11	vine	
Woodland phlox	<i>Phlox divaricata</i>					8A-8B	6 in	
Wild plumbago	<i>Plumbago zeylanica</i>					9B-11	1 ft	
Solomon's seal	<i>Polygonatum biflorum</i>					8A-9A	1-3 ft	
Wild coffee	<i>Psychotria nervosa</i>					8B-11	1-8 ft	
Rouge plant	<i>Rivina humilis</i>					8A-11	1-3 ft	
Cutleaf coneflower	<i>Rudbeckia laciniata</i>					8A-9B	2-4 ft	
Carolina wild petunia	<i>Ruellia caroliniensis</i>					8A-10B	6-18 in	
Lyreleaf sage	<i>Salvia lyrata</i>					8A-10B	1-2 ft	
Southern river sage	<i>Salvia misella</i>					9A-11	3-9 in	
Bloodroot	<i>Sanguinaria canadensis</i>					8A-8B	6 in	
Catchfly	<i>Silene</i> spp.					8A-8B	6-12 in	
Indian pink	<i>Spigelia marilandica</i>					8A-8B	1-2 ft	
Canadian germander	<i>Teucrium canadense</i>					8A-11	2-4 ft	
Rue anemone	<i>Thalictrum thalictroides</i>					8A-9A	6-9 in	
Wakerobin	<i>Trillium</i> spp.					8A-9A	6-8 in	
Fakahatcheegrass	<i>Tripsacum dactyloides</i>					8A-10B	4-8 ft	
Frostweed	<i>Verbesina virginica</i>					8A-11	2-5 ft	
Giant ironweed	<i>Vernonia gigantea</i>					8A-10B	3-5 ft	
Common blue violet	<i>Viola sororia</i>					8A-10B	6 in	

For a more extensive list of shade-tolerant plants, visit www.FlaWildflowers.org/shady-landscapes.

To identify which **hardiness zone** you live in, go to PlantHardiness.ars.usda.gov.

Light Full sun Partial sun/shade Full shade
 Bloom season Winter Spring Summer Fall
 Soil moisture Dry Moist Wet
Pollinator/Bird use Larval host Butterflies Bees, other pollinators Birds Hummingbirds
 Bloom color keys are meant as general guides; exact colors will vary.

This guide was printed with permission from the Florida Wildflower Foundation. They protect, connect and expand native wildflower habitat through education, research, planting and conservation. Learn more and find additional resources at www.flawildflowers.org

Go the Distance

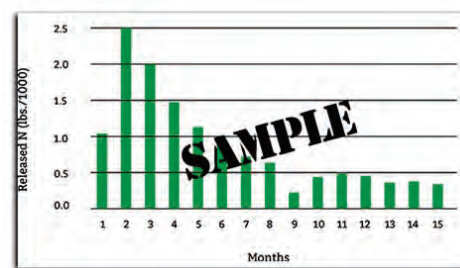
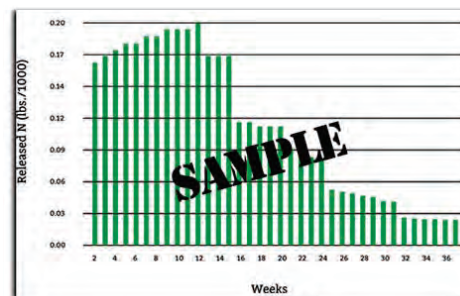
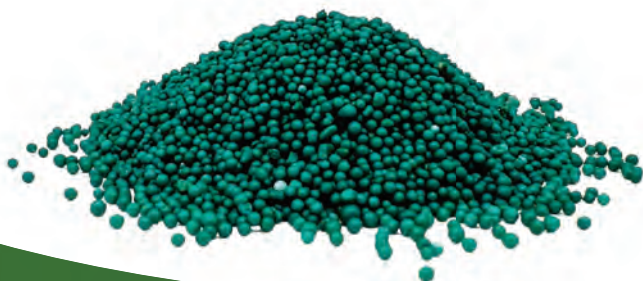
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The Hollis Family Welcome Center

As you enter Bonnet Springs Park, you will be immediately drawn to the Hollis Family welcome center. The design of this building is elegant and modern while also meshing seamlessly with the surrounding environment. The space is perfect for welcoming guests as they begin their journey through the park. The Welcome Center houses a customer service and welcome desk, an upper area dedicated to the history of the land and park and a café for parkgoers.



Harrell's *and the Beautiful* Bonnet Springs Park — Growing a Better World in Our Community

Situated in the center of Lakeland, Florida, which is home to Harrell's headquarters, Bonnet Springs Park (BSP) is within walking distance from downtown yet easily accessible via vehicle from all four corners of Lakeland.

The 168-acre urban oasis artfully blends a tranquil natural park and an urban recreation center. Often likened to the iconic Central Park of New York City, Bonnet Springs Park boasts walking paths, a boathouse, several playgrounds, several restaurants, and an event space. Plus, there is The Jack and Tina Harrell Greenhouse, acres of green space, and local ornamentals in the Harrell Family Botanical Gardens that are all supported by Harrell's fertilizer (more on that below).

The park is located on what was the largest railyard in the state of Florida. After decades of use, the railyard closed in the 1980s, leaving an environmental footprint that would require years to remediate. After the land was dormant for about 40 years, a community of people purchased the parcel and put together a plan. Rather than repurposing the space into housing complexes or another downtown retail space, the group of visionaries decided that the land should take on a different purpose.

As the park’s website states, “Bonnet Springs Park will provide connections that spark an ecological renaissance in our community.” From the beginning, the vision for the park was to pay homage to Lakeland’s history while implementing a plan for the future that focuses on:

- Passion for Lakeland and its parks
- Public access
- A new urban landscape
- Inclusiveness
- Respect for people and nature
- Responsible management

The goal has always been to create connection, and the park serves as a bridge that unites the people of Lakeland with one another and with nature. In every way, Bonnet Springs Park is all about community.

The Generosity of Community Brought Bonnet Springs to Life

The idea for the park was ignited in 2016, and local philanthropists partnered with a Boston-based firm to create a master plan for site remediation and design. Remediation began in 2019, and it wasn’t until October 2022 that the park opened to the public.

This project was important to many families and entities in the Lakeland community from the start. Always invested in building up their city and connecting it more fully, the Barnett family, Hollis family, Harrell family, and so many others committed to supporting the

development of the park from the beginning, donating funds to help bring the vision to life.

As you stroll through the park, you can find signage throughout that pays homage to the person, family, or entity that brought that space to fruition:

- The Hollis family – Bonnet Springs Welcome Center
- Watson Clinic – Gallery
- The Rodda family – The Family Playground
- AgAmerica – Heritage Gardens
- The Joe L. and Karen Ruthven Train Playground
- Allen & Company – Family Lawn
- Tony Gaskins – Overlook Patio
- Anne McGregor Jenkins – Rooftop Garden
- The Clyne family – North Mountain
- The Franklin family – South Mountain
- SouthState Bank – Plaza
- Southern Glazer’s Wine and Spirits – Rooftop Bar
- George W. Jenkins – Outdoor Kitchen
- Citizens Bank & Trust – Ballroom
- Maya and Wesley Beck – Patio
- The Ruthven family – Playground
- The Harrell family – Botanical Gardens
- The Harrell family – Greenhouse
- Bayer – Sight Garden
- Radiology and Imaging Specialists – Taste Garden
- Barnett – Sound Garden
- The Charlton family – Fragrance Garden
- GiveWell Community Foundation – Nature Center
- Ann and Ward Edwards Boathouse



The Allen and Company Family Lawn and Florida Children’s Museum

The Allen and Company Family Lawn, just outside the Florida Children’s Museum, is massive and open, designed for concerts, events or for families to enjoy a picnic or to run around and play. The children’s museum is one of the coolest places in Bonnet Springs Park. While the location and name are new, the children’s museum (formerly Explorations V) was relocated from its previous location downtown.

- The Blanton family – Lagoon
- Vreeland/GiveWell Community Foundation – Nature Bridge
- The Mims family – Lagoon Boardwalk
- Crenshaw – Canopy Walk
- Nicholas and Ashley Barnett – Peace Pagoda
- Kiwanis Cares for Kids – Treehouse
- Lakeland Regional Health – Circulator
- Bunch – Bridge
- The Kincart and Jonsson family – Archway

Jack Harrell Jr. on Bonnet Springs Park

Inside the park, you'll find The Jack and Tina Harrell Botanical Gardens and The Jack and Tina Harrell Greenhouse.

"The Harrell Family and Harrell's are honored to be a part of Bonnet Springs Park. Bonnet Springs Park is a once-in-a-lifetime opportunity to create a transformational setting in Lakeland and Central Florida. Harrell's has committed to providing fertilizer and plant protection products for 20 years, and Harrell Family Charities has committed funds to the Park and the Carol Jenkins Barnett Endowment to fund the operations of Bonnet Springs Park. Please come visit BSP. You'll be glad you did." -Jack Harrell Jr.

Growing a Better World at Bonnet Springs Park

As a company, Harrell's has gotten involved, too. They are committed to donating fertilizer, seed and turfgrass management products to support park maintenance for the next 20 years. Donating fertilizer and turf management products means more to Harrell's than delivering the goods. Instead, Harrell's employee-owners work with park maintenance as consultants, providing agronomic support, utilizing our Ph.D.s to add agronomic plans to the park's different areas and strategize product implementation. Dr. Aaron Palmateer, Director of Agronomy, will also specifically assist the park with horticultural planning.

While the designers and builders in these areas did a beautiful job working plants into the environment (everything is very visually appealing and seamlessly fits right in), the greenhouse especially offers a unique look into an area of horticulture that many people never get to see up close.

It's enlightening to see the different stages of growth that the plants are in and how the greenhouse functions to provide a perfect growing environment. This coupled with getting to see greenhouse managers apply products and tend to plants, is educational for people of all ages and a great way to introduce people to the world of greenhouse growers.

Join us as we walk through the park, touring some of the most popular attractions.

The Jack and Tina Harrell Family Greenhouse

Donated by the Harrell family, the Jack and Tina Harrell Greenhouse area offers an educational look into greenhouse management as well as some beautiful plants for guests to peruse.





The Harrell Family Botanical Gardens

Unlike anything else in Lakeland, the botanical gardens enhance your walk through the park. By taking the road less traveled, you'll journey off the beaten path and through an unrivaled garden of native flowers and plants.



Honoring Our Core Values – Taking Care of People

There are also many more beautiful spaces within Bonnet Springs Park, including several playgrounds. We are honored to be able to help steward this land, and we look forward to partnering with the people of Lakeland to continue fostering connections.

We are grateful to have access to such an amazing resource in Bonnet Springs Park and we're very fortunate to be surrounded by leaders who are committed to generosity and live out Harrell's core value, "Take Care of People."

For more on Bonnet Springs Park, visit www.bonnetspringspark.com. 🌱

The Crenshaw Canopy Walk

Walking the boardwalk gives you an elevated perspective of the more wooded area of the park. From this vantage point, you'll pass over trails that you may have already seen, look out at the lake and other areas, and get yet another perspective on the beautiful nature in Bonnet Springs.





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Series: Black Crowned Night Heron zipping around the mangroves. Notoriously elusive and shy, these felt good!



Wood Stork family



Tribute to **MAC CARRAWAY**



“To leave the world a bit better, whether by a healthy child, a garden patch, or a redeemed social condition; to know that even one life has breathed easier because you have lived — that is to have succeeded.”

—Ralph Waldo Emerson

F TGA Acting Executive Director Mac Carraway retired for a second time at the end of 2022. His service to the FTGA, the turfgrass industry, the environment, state government and his community are emblematic of the quote above, and there can be no doubt that he left them all in a better place than he found them. We are grateful that he re-emerged from retirement when the association needed an executive director, and thankfully, he stayed much longer than he had planned. That’s Mac’s *modus operandi*—serve when the need arises. As FTGA President Jason Frank noted in his column, Mac left a workable template to help ensure the FTGA thrives long into the future.

Long-time FTGA members remember that Mac was an active member, served on the board of directors and ultimately served as president during the 2010–2011 term. In September 2014, he was awarded the Wreath of Grass, the FTGA’s highest award reserved for those who have given outstanding service to the association and the turfgrass industry. Mac’s ability to communicate shone especially bright in his talent for advocacy. Since the Environmental Research & Education Foundation’s inception, he concurrently served as its executive director and advocated on behalf of the green industry with an emphasis on relaying our commitment to environmental stewardship to those in positions of authority.

Mac has been involved in the Florida green, agricultural and business industries the entirety of his career, serving in numerous sectors and in various volunteer positions in the community. Before returning to FTGA as acting executive director, he was president of Carraway Consulting Group LLC, a financial, agricultural/green industry and water-policy consulting firm he started in June of 2014. Prior to that, he served for 10 years as the President of SMR Farms in Bradenton, a diversified agricultural operation with turfgrass, cattle, citrus and tree-nursery operations in Manatee and Sarasota Counties, and for 11 years, as the CFO for Pacific Tomato Growers in Palmetto, a national fresh market grower, packer and shipper of tomatoes and other seasonal row crops.

In addition, Mac has been involved for many years in a wide variety of Florida business and ag/green industry organizations at a leadership level. He served two terms as co-chair of the Southwest Florida Water Management District's (SWFWMD) Agricultural / Green Industry Advisory Committee on which he has served for over 15 years representing broad interests in Florida's agricultural and green industries. He was appointed by Governors Bush and Crist to the SWFWMD Manasota Basin Board for two terms, where he chaired the Basin Board Education Committee. His credentials include extensive involvement in Florida water policy development.

Locally, in Manatee County, Mac is a past chairman of the Manatee Chamber of Commerce and long-time chamber member and advisor. In 2022, he was the recipient of the Robert Bartz Leadership award by the Manatee Chamber for his commitment to community service in Manatee County. In addition, he has been involved in a variety of education-related organizations and has been part of awarding the Carraway Family Migrant Student Scholarship for the Manatee County Migrant Student Awards Program for the past 24 years.

In late 2022, Mac retired again from active industry work to fully pursue his interest in photography, which dates to his college days. A member of ArtCenter Manatee, Mac was the winner of its juried photography exhibit in 2019 and has placed in other juried shows there. His photographs have also been recognized by the Conservation Foundation of the Gulf Coast and the Florida Association of Environmental Professionals. He has done several commercial commissions and his photos have appeared regularly in *Golf Central Magazine*.

Mac focuses on bird photography—the fruits of which you can often see on FTGA's Twitter, Facebook and Instagram feeds on "Nature Saturdays" as well as his Facebook pages. He has a talent for snapping candid, award-winning photos at just the right moment as if by the birds' design. His recent book, *The Birds of Robinson Preserve*, documents one of his favorite places close to his home, near the mouth of the Manatee River at Tampa Bay.

When Mac isn't photographing his birds in the wild, he is spending time in Bradenton where he lives with his wife Phyllis, near his son David and his daughter-in-law Heather.

We wish Mac all the best in his well-earned return to retirement, but his leadership and friendship is sorely missed. Thank you, Mac, for helping to guide us through the murky waters of these particularly challenging times. 🌱

Picked up first place in the ArtCenter Manatee Photography Show at tonight's opening reception. "Credit to my Spoonbill pal for making me look good."



Migrant Education Awards Ceremony. To my left is Patricia Morales, the recipient of the Mac and Phyllis Carraway Migrant Scholarship, awarded every year since 1999 (along with his brother). These students and their families always inspire!



Captain Jay, Captain Matt, and the bird guy (me). Holding the fort at the Florida Maritime Museum boat tour at this weekend's commercial fishing festival.



Mac Carraway representing EREF and Turf Life Partnership.



Manatee Chamber of Commerce past chairman's breakfast.



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New Port Richey Pasco-Hernando College	2/20/24
Plant City Hillsborough Community College Trinkle Center	2/21/24
Ft. Myers Florida Southwestern College	2/22/24
Tallahassee FSU Rec SportPlex	2/27/24
St. Augustine St. John's County Ag Center	2/28/24

MARCH

Ocala Marion County Extension Office	3/19/24
Orlando Orange County Extension Office	3/20/24



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Ginger and Her Owlets

Ginger, one of several Eastern screech owls at Olde Florida Golf Club, lives on Hole 5. She has returned home the past few years to hatch her owlets and is quite comfortable in her Native Bird Box (www.facebook.com/NativeBirdBoxes) environs. She's pictured here with her newly hatched owlets that remained with her for a few weeks before venturing out on their own. Photo courtesy of Darran J. Davis, CGCS, who says the birds often return because Olde Florida "gives a hoot."

Days on the Hills



American Golf Industry Coalition National Golf Day - Nearly 250 golf course superintendents from around the nation descended on Washington, D.C., in early May to meet with representatives and flex their environmental muscles by participating in the annual National Golf Day Service Project. "This was a record attendance," reports FTGA Board member Dave Robinson. Dr. J. Bryan Unruh was in attendance as part of the Florida group. Photo Credit: GCSAA.



Dr. J. Bryan Unruh (far right) and Dave Robinson (back row, second from the right) took part in the GCSAA Government Affairs Committee's meeting with the EPA where they discussed golf course BMPs. Photo credit: GCSAA.



Dave Robinson at the National Golf Day Service Project. Photo via Dave Robinson.

F TGA members joined many industry professionals in meeting with state and national representatives to further our interests. These annual events are important to ensure our voices are heard. Just as legislators represent the people, those who attended these events spoke for us. Thanks to all who made these trips.

DAYS ON THE HILL

Recently, Florida Golf Course Superintendents Association (Florida GCSA); Florida Nursery, Growers & Landscape Association; and Florida Pest Management Association (FPMA) held "Days on the Hill" legislative events in Tallahassee to promote the green industries' priorities and to further educate representatives on our mutual positions. In addition, they listened intently to agency representatives and committee heads and members. These events occur to take our views to those who can act on them.

FTGA did not hold an event; however, we were well represented. FTGA was a sponsor of the FPMA

Legislative Days, and the Executive Committee joined FPMA members in Tallahassee. FTGA Secretary/Treasurer Eric Dixon says, "The event included several chances to connect with key legislators and regulators to advocate on behalf of the Florida Turfgrass Industry. In addition, informational sessions were held with industry lobbyists, FPMA staff, and Tallahassee Reporter Dara Kam of the News Service of Florida.

"During these sessions, members were able to learn about the legislative process and hear updates on upcoming legislation that was important to the Florida pest management industry. Several pieces of legislation affect members in all sectors of the Florida turfgrass industry.

"One highlight of the event was the Florida Department of Agriculture and Consumer Services (FDACS). All three Executive Committee members in attendance were able to tour the FDACS facility and visit the labs where seeds, fertilizer and other nutrients are tested. They also met with staff members, including those in the vital back office,

who help with license renewals and CEU approvals. It was a rare opportunity to connect and see how these critical processes happen."

Dave Robinson attended the Florida GCSA event as part of our ongoing commitment to advocate for the industry and go on the record with FTGA's need to ensure the stability of the industry as well as its members' interests.

AMERICAN GOLF INDUSTRY COALITION NATIONAL GOLF DAY

In early May, nearly 250 golf course superintendents from around the nation descended on Washington, D.C. to meet with representatives and flex their environmental muscles by participating in the annual National Golf Day Service Project. "This was a record attendance," reports FTGA Board member Dave Robinson. Dr. J. Bryan Unruh was in attendance as part of the Florida group.

On May 9, Joshua Kelley and Dave Robinson volunteered on behalf of FTGA and joined five other volunteers from Florida and a group of 220 from



SiteOne at the 2023 Florida Legislative Days supporting FPMA and FTGA with State Senator Dennis Baxley. Photo Credit: SiteOne.



Resource table at the FPMA Legislative Days. Photo credit: FPMA.



Florida contingent working during the service day in Washington, D.C. Photo credit: Florida GCSA.



Photo courtesy of Jason Frank.



Attendees visit the Florida Department of Agriculture and Consumer Services. Photo credit: Eric Dixon.



FTGA representatives took part in a 'spruce-up' project at the Washington Mall. Photo via Joshua Kelley, Twitter.

around the nation to beautify the National Mall as part of the 2023 National Golf Day Service Project. “[It took] 1.2 million in John Deere equipment, 1,023 plants, multiple pallets of sod, four truckloads of mulch, and many bags of seed,” according to Joshua.

On May 10, superintendents met with their elected representatives. Dave Robinson says, “In all, 39 states and 162 unique House districts were represented. More than 240 meetings were held with members of Congress. Topics covered in those meetings included:

- ★ Modernizing the U.S. Tax Code – remove golf from exclusionary list.
- ★ H2B – increase Visa cap by excluding returning workers from the total allocation.
- ★ Personal Health Investment Today Act (PHIT) – allow use of pre-tax Health Savings Accounts for golf equipment and other health related items.
- ★ Farm Bill – annual funding for turfgrass research and statistical surveys for turfgrass.”

Our thanks to everyone who attended and furthered the interests of golf, the turfgrass industry and its research. 🌱

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Lethal Viral Necrosis and Sugarcane Mosaic Virus on Saint Augustinegrass

What is happening?

By Henry Mayer, UF/IFAS Miami-Dade Extension and Dr. Phil Harmon, UF/IFAS Plant Pathology Department, Gainesville

The sugarcane mosaic virus (SCMV) causes both **mosaic** and **lethal viral necrosis (LVN)** diseases affecting Saint Augustinegrass. Sugarcane mosaic was identified in the 1960s with not much economic importance. The latest findings are more recent and are causing a lot of damage to include the death of the Saint Augustinegrass 'Floritam' variety. **How can one virus cause two diseases?** It is like the human diseases chicken pox and shingles. Both are caused by the same virus, varicella-zoster virus (VZV), but they produce very different symptoms, with shingles being potentially life threatening and only occurring in older people who have had chicken pox. Floritam gets the chicken pox (mosaic), but also develops the shingles (LVN) later when exposed to stress (temperatures around 65°F). Other varieties of Saint Augustinegrass don't develop that second and more severe disease, but the exact reason is still unknown.

What are the differences between the virus symptoms?

I know it is confusing, but in general, mosaic is characterized by mild and scattered, yellow, streaky symptoms running lengthwise down some leaf blades of infected plants (Fig. 1) while the plants susceptible to LVN develop severe dieback (Fig. 2) that can ultimately kill infected lawns (Fig. 3).

According to Dr. Phil Harmon, UF/IFAS Plant Pathology Department, so far only the 'Floritam' host plant has developed severe symptoms and died in his research. This occurs when the Floritam is infected with the virus, and the temperature dips below 65°F. **Why this virus is a problem?** In Florida, some 80–90% of Florida Saint Augustinegrass lawns are planted with 'Floritam'. Saint Augustinegrass 'Floritam' was released in 1973 by the University of Florida and Texas A&M University as an improved cultivar.

How is the LVN spread? The virus is spread in the moist plant sap from infected grasses. Exposed plant sap occurs mostly when lawns are freshly cut. Lawn mowers, trimmers, equipment wheels, and other similar equipment pick it up at that time. Once the sap and clippings dry out, they no longer transmit the virus to new grass. The virus does not survive for long outside plant tissue. Mowing when lawns are wet can extend the viability of the virus on equipment because it keeps the plant sap hydrated longer. It is also believed that aphids spread the virus, though not very efficiently.

The bad news is that unfortunately, there is no chemical control management for the virus! Only cultural practices such as sanitizing the mowing equipment by using sanitizing materials such as PineSol, potassium peroxydisulfate and sodium chloride, quaternary ammonia products, Physan 20 and Lysol might help slow the spread to new areas; where it



occurs, replace the dying 'Floritam' with other "resistant" cultivars; and mow the infected areas last. "Resistant" in this case means gets the virus but doesn't die.

If you suspect your grass is infected with LVN or SCMV, you can collect a sod sample and send it to the UF/IFAS Plant Diagnostic Center, <https://plantpath.ifas.ufl.edu/extension/plant-diagnostic-center>. 🌱

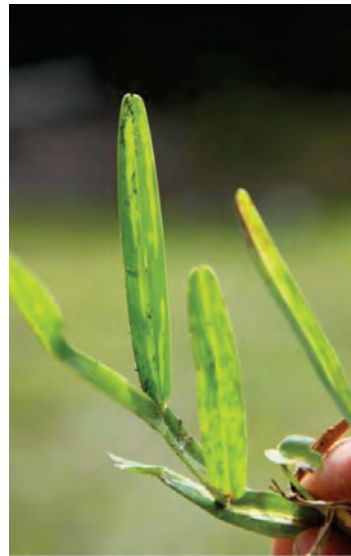


Figure 1. Mosaic symptoms on leaf blades of St. Augustinegrass infected with sugarcane mosaic virus (SCMV), courtesy of UF/IFAS Dr. P. Harmon.



Figure 2. Lethal viral necrosis (LVN) on leaf blades of 'Floritam', courtesy of B. Schall.




Figure 3. Infected and dying lawns with LVN, also noticed the mower tracks, courtesy of B. Schall.



Henry Mayer is a commercial urban horticulture agent at the UF/IFAS Miami-Dade Extension. He has an extensive background in commercial landscaping and lawn management as well as educational leadership, teaching and the development of sound educational programs.



Dr. Phil Harmon is a professor, turfgrass pathologist, and Extension specialist with UF/IFAS Department of Plant Pathology. He runs the Rapid Diagnostic Service. For more information on rapid diagnosis, visit <https://turf.ifas.ufl.edu/rapid-turf-diagnostics-service/>.



CEU Round Up

This year's CEU Round Up will be held on Zoom. Each session runs three hours.

See pages 14-15 for session descriptions and their approved CEUs from FDACS, FNGLA and GCSAA.

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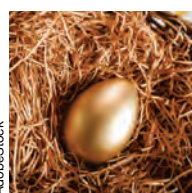
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Investment Ideas for Business Owners

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Retirement Account

Depending on the nature of your business and how many employees you have, you can choose from a variety of tax-advantaged retirement plans, such as an owner-only 401(k), an SEP-IRA and a SIMPLE IRA. By contributing regularly to one of these accounts, you can avoid being entirely dependent on the sale of your business to pay for your retirement years. To fund your 401(k) or other retirement plan, you'll have many investment options—stocks, bonds, mutual funds and so on. And if you “max out” on your retirement plan, you may even be able to build a separate investment portfolio. In any case, keep in mind that you're already putting a lot of money into your business, so, to achieve a level of diversification, you may want to concentrate your investment choices in areas outside your industry. However, while diversification can help reduce the impact of market volatility on your portfolio, it can't guarantee profits or protect against losses in a declining market.



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Property

Your physical space is a key part of your business' success. So, you may want to invest some time in comparing the pros and cons of renting versus owning. Of course, owning your building may require a big financial commitment, and it may not be feasible, but it could free you from worrying about untimely rent increases.



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Disaster Protection

If a fire or a weather-related disaster should strike your business, would you be prepared? It's important for you to create a disaster recovery plan, which can include business interruption insurance to pay for your operating costs if you're forced to shut down for a while.



Depositphotos

Emergency Savings

While a disaster protection plan with appropriate insurance can help keep your business afloat, it's unlikely to cover other types of emergency needs, such as a major medical bill or an expensive repair to your home. For these unexpected costs, you may want to build an emergency fund covering at least a few months' worth of living expenses, with the money kept in a liquid account. Without such an emergency fund, you may be forced to dip into your 401(k), IRA or other long-term investment vehicle.

You'll also want to invest the time and energy into creating a business succession plan. Will you keep the business in your family? Sell it to outsiders or a key employee? If you do sell, will you do it all at once or over time? Clearly, the answers to these types of questions will make a big difference in your ultimate financial security.

Finally, invest in help—enlist the services of a financial advisor and business-planning professional, so you'll be able to make the decisions that work best for your business and you.

Your business may well be a lifelong endeavor—so make sure you're investing whatever it takes to earn a lifetime of benefits. ♻️



This article was written by **Edward Jones** and contributed by FTGA member and Edward Jones Financial Advisor **Erik Jorgensen**. If he can be of service, you can reach him at by phone at 561-741-1173 or 561-310-5563 or by email at erik.jorgensen@edwardjones.com.



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