FLORIDA TURF DIGEST

FLORIDA TURFGRASS ASSOCIATION

May/June 2019
VOL. 36 / NO. 4

RED TIDE FORENSICS: So, THAT's What Happened

Fact or Fiction: Is Lawn Fertilizer Contributing to Red Tide?

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President's Message

By **Andrew J. Jorgensen**, *FTGA President*

Finding Balance

Finding the right balance in life isn't the easiest of tasks. In our industry, a few hiccups one way or the other can quickly upset the equilibrium. The same can be true in our own personal lives. Deciding how to properly balance the time between our professional careers and our personal lives can be tricky. Recently, FTGA President Brad Holler had to make that decision.

As owner-operator of start-up Agro-Smart Turf and Ornamental Care of SW Florida, Brad has seen tremendous success in his professional life, continually consuming more of his time each day to manage a growing business. Last month, Brad made the difficult decision to step down as FTGA president and from a position on the board of directors to concentrate more on his family and raising his two beautiful children. The entire board wishes Brad continued success and appreciates his service to the FTGA over the previous five years.

Moving forward, I have stepped back into the president's role for the remainder of Brad's term. With great assistance from Heather, Emily and Marcia in the office, the FTGA hasn't skipped a beat. We continue to work on your behalf to provide quality education, disseminate information and to advocate for our entire industry. If you have any questions or concerns, please feel free to reach out to any of the FTGA Board members. We are happy to help.

Along these lines, during fertilizer ordinance hearings or the recent outbreaks of red tide in our coastal waters, finding balance between the wishes of our policymakers and those within the industry can be an endless, ongoing task. Often, we're up against personal agendas and biased interpretation of the science by officials, as was the case in the recent Alachua County blackout hearing. Despite the almost four hours of public comments and expert testimony from industry experts, the county commission opted for an eight-month fertilizer blackout period.

The good thing that came from this is the unity of the industry that came together to fight back. Several industry professionals put aside their competitive nature to sit side by side in order to make their voices heard. I am always amazed by the camaraderie within this industry, and this hearing was a perfect example. Although we didn't find the balance we had hoped for, I think we made our presence felt and our voices heard. We were able to convince at least one commissioner of the need for two stakeholder workshops to be held prior to the ordinance going into effect. We are hoping that by having this conversation, we can, at a minimum, provide for a professional exemption for licensed fertilizer applicators during the blackout period.

The basis of all these discussions has been water. We rely on water in our own personal lives; we consume it to live, we need it for our landscapes, we use it for recreation, and we strive to protect it. After all, we are citizens of Florida, just like those who aim to attack us. This issue will dive into the facts behind red tide from and academic as well as an industry perspective. I hope you enjoy reading it.

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From the Executive Director

By **Heather Russo**, *Executive Director*

FTGA's 2019 Membership Campaign a Resounding Success

I am so proud to say that thanks to all our renewing and new members, we started off with a wonderful membership campaign. The association is up 6% over last year at the beginning of Q2. Not only that, the Turf Seminars were up by 11%. That's the largest increase in years. During the turf seminars, we introduced a New Member 20% Discount for a membership, and I can, without a doubt, say it went well. This has all been possible due to the support of the FTGA directors and current members referring new members to the association—so I sincerely thank you for your referrals and your continuing support of the FTGA.

I'd like to extend a special thanks to our Premium and Premium-Plus member organizations. We appreciate your support of the association:

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The FTGA Board of Directors is proud to announce a new member benefit—the **FTGA Legacy Scholarship.** The scholarship was designed for any FTGA member whose child is an incoming freshman, sophomore, junior or senior planning to attend a state college, university or other program in the state of Florida. The applicant must maintain GPA of 3.0 or higher. The applicant must be enrolled by fall and present proof of enrollment from the registrar's office. The FTGA member must have maintained a three (3) year membership at the date of scholarship application.

The Florida Turfgrass Research Foundation has five other scholarships available. For more information on the scholarships, visit www.ftga.org/page/scholarships. The students will be awarded their scholarships during the All Attendees Awards Lunch during the 67th Annual Conference & Show in Kissimmee. The deadline to apply for a scholarship is June 30.

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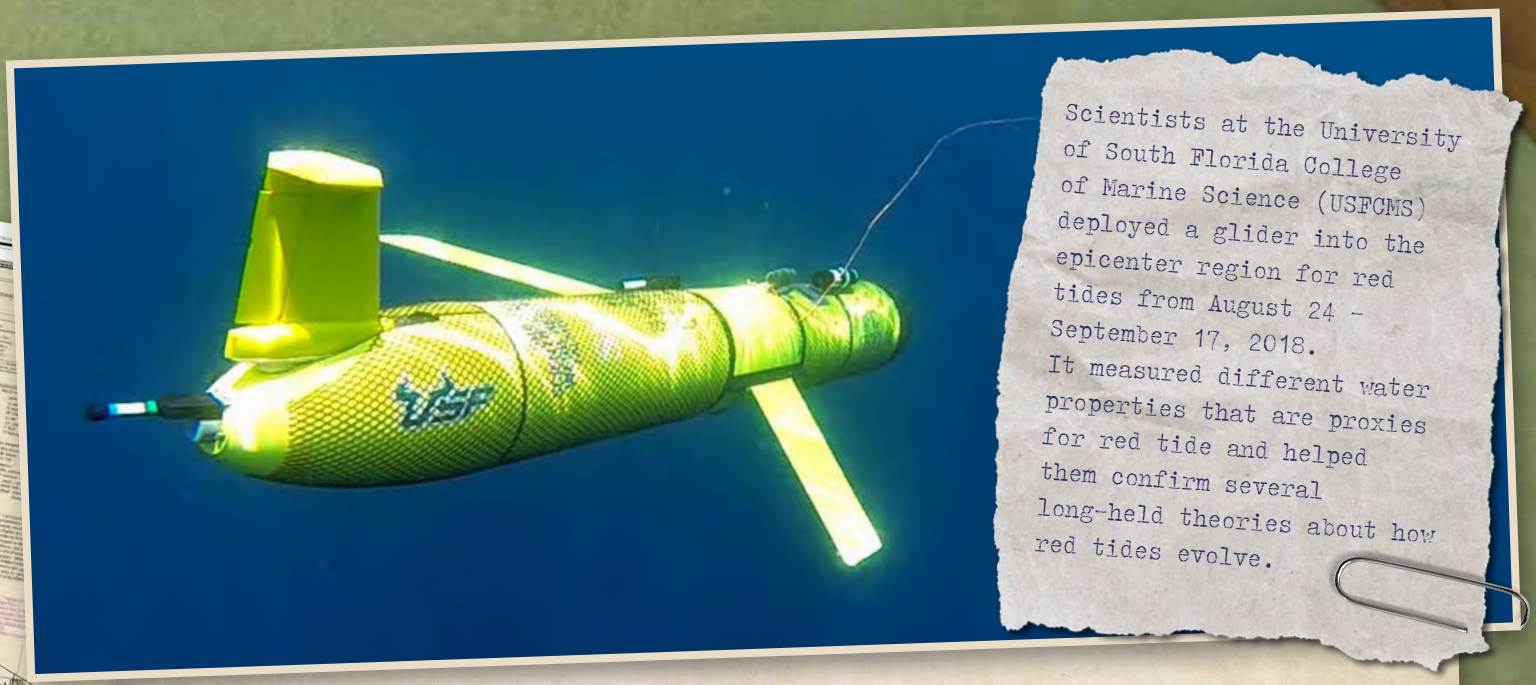
RED TIDE Forensics:

So, THAT's What Happened

A team led by the USF College of Marine Science and Florida Fish and Wildlife Conservation Commission unraveled the cocktail of conditions that led to last year's epic red tide along Florida's coast.



By **Kristen M. Kusek, M.S., M.A.**; *Science Communication Strategist; University of South Florida College of Marine Science*

Scientists fought back last summer as red tide choked the Florida west coast in what felt like a relentless stranglehold. In late August they loaded a robotic torpedo-like glider with sensors and sent it on a nearly month-long swim where they suspected the red tide began—near the bottom, about 50 miles off the coast between Clearwater Beach and Sarasota Bay—to gather data about the water that fueled the tide.

It was a good move.

As a result of that mission and an arsenal of computer simulations, the team led by Dr. Robert Weisberg, distinguished professor at the USFCMS, uncovered new understanding about what made last year's red tide so epic—and confirmed several decades-long hunches about how Florida's red tides work. They reported their findings in the *Journal of Geophysical Research — Oceans* with long-time collaborators at the Florida Fish and Wildlife Conservation Commission's (FWC) Fish and Wildlife Research Institute (FWRI).

"Even though we still have many questions about the complex biology and ecology of red tide, what matters when it comes to prediction is the ocean circulation," said Weisberg, the paper's lead author. "The physics control the biology."

The team plugged the data from the glider into a computer model that tracks the way currents move in the Gulf and confirmed the long-held hypothesis that red tides originate offshore and are transported to the coast by subsurface currents.

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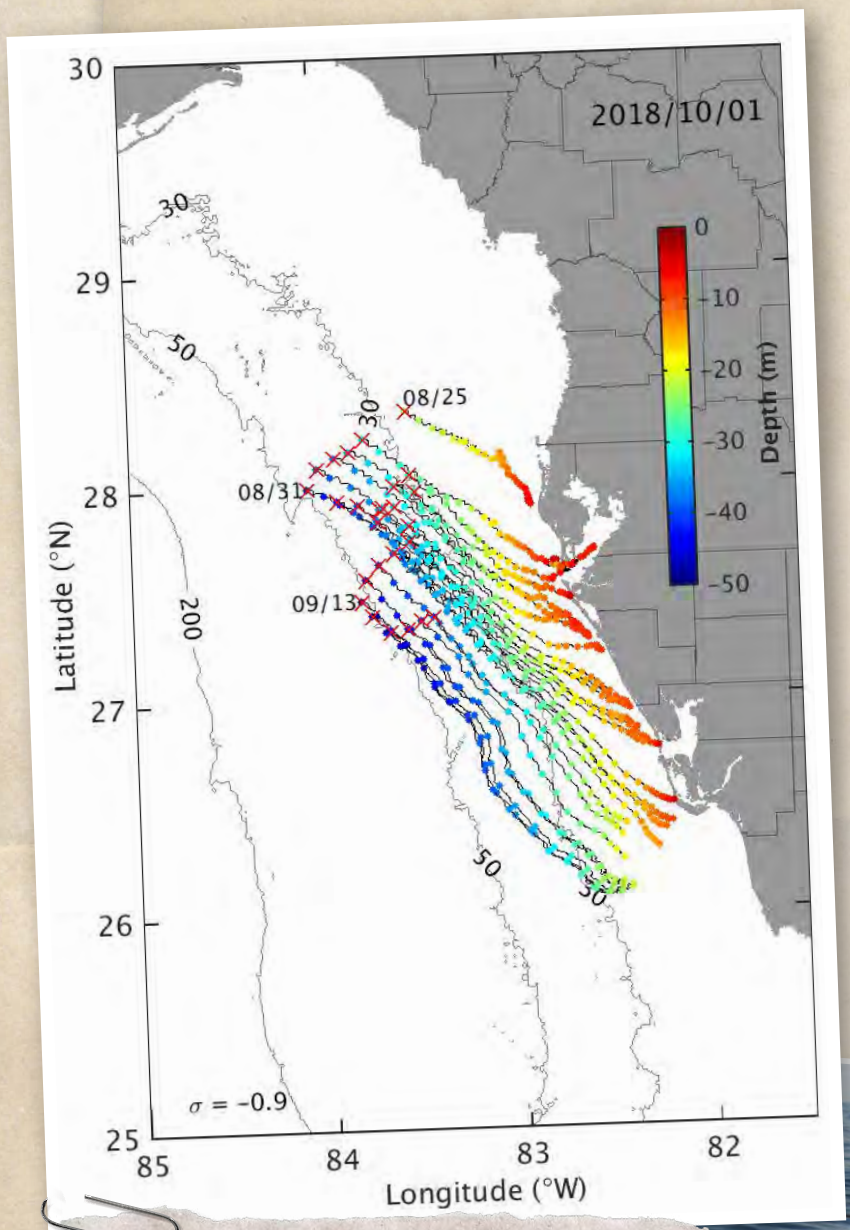

Trajectories for water particles initialized along the glider track from August 24, 2018, to September 17, 2018. The modeled trajectories begin with water particles (including *K. brevis* cells), marked with an "X" near the bottom. The daily color-coding shows their actual depth as they traveled towards the coast where they manifested as a red tide.

The glider picked up a high concentration of chlorophyll, a signature of the red tide algae cells near the bottom, and the model confirmed that the physics were ideal for moving the cells inshore to the area considered to be the epicenter of red tides in the Gulf: north of Tampa Bay to south of Charlotte Harbor.

Weisberg's group has refined a circulation-based prediction scheme over several decades that they've used to forecast whether or not a major red tide will occur in any given year. It's been accurate for 20 of the last 25 years. While this year was no different in the model's predictive prowess, it was also a much more complicated chapter in Florida's storybook of red tide events.

Two *K. brevis* cells – the culprit of red tides on Florida's west coast – under a microscope. Scientists recently reported how the epic 2018 red tide unfolded in *Journal of Geophysical Research: Oceans.* Photo credit: FWRI

Goldilocks of the Gulf and a Perfect Storm

"What made last year's bloom particularly epic was that it formed on the heels of a 2017 bloom that never ended," Weisberg said. All told, it lasted for nearly two years and claimed headlines as the worst red tide since 2005.

The culprit of Florida red tides is a marine dinoflagellate, a tiny, floating algae called *Karenia brevis.* "*K. brevis* is present in the Gulf year-round," said study co-author Dr. Kate Hubbard, a scientist at the Florida Fish and Wildlife Conservation Commission–Fish and Wildlife Research Institute who leads the state's monitoring efforts.

It blooms annually in larger concentrations about 20 to 60 miles offshore near the seafloor, usually in early spring through the summer if the water conditions are just right—making it a kind of Goldilocks of the Gulf. *K. brevis* will bloom, as it did last year, when it has enough nutrients to thrive, but not too many. It can also get the nutrients it needs from a spectrum of sources.

"It's a bit counterintuitive," Weisberg said. "Because *K. brevis* thrives in a low-nutrient environment."

Sometimes the Loop Current and its eddies interact with the West Florida Continental Shelf in a way that causes upwelling strong enough to deliver nutrient-rich water from the deep ocean onto the shelf. When this happens, other algae will grow faster than *K. brevis.*

"When we see strong upwelling induced by the Loop Current during spring to early summer, we don't get a major *K. brevis* bloom," said study coauthor Dr. Yonggang Liu, who studies the physics of the ocean with Weisberg at the USFCMS.

But last year, conditions were perfect for one: no strong upwelling on the shelf during spring, and the bloom formed. In the middle of July, persistent upwelling did begin, too late to suppress the bloom but at the right time to ensure that what was growing along the bottom offshore was carried toward the coast. In the fall, it manifested along the west Florida coast. And it was worse than most years because it joined up with red tide left over from 2017 south of Tampa Bay—effectively taking over the entire epicenter region.

There it killed fish and other wildlife and caused respiratory irritation in beachgoers. A toxin inside the algal cell causes these atrocities and can make people sick if consumed in shellfish.

None of this surprised scientists who have been studying red tides on the Florida west coast since the 1950s. What did surprise them was that fact that this red tide also made its

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way up to the Panhandle and even around to the east coast of Florida. Most red tide stays along the Florida west coast.

The computer simulation helped them understand how that happened. In this rare event, the Loop Current and the wind-driven currents conspired to produce simultaneous red tide events on all three of Florida's coasts.

Tropical Storm Gordon, which hit early in September 2018, temporarily disrupted the upwelling picked up by the glider and carried a portion of the red tide northward to the Panhandle. After the passage of Gordon, strong winds blew the red tide cells that had moved inshore back out to the Gulf where the upwelling circulation then transported these cells to the southwest end of the West Florida Shelf. There they were "captured" by the Loop Current and carried around Florida's southernmost point and up the east coast.

"Once it's in the Loop Current, that feeds the Gulf Stream. It's only a matter of days before cells can arrive in Palm Beach," said Weisberg.

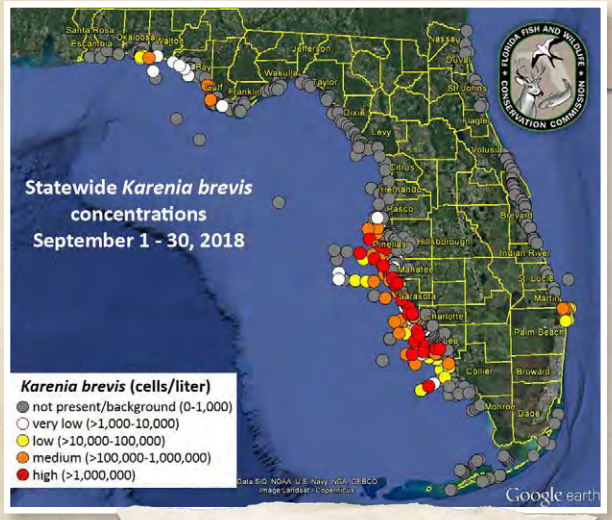
Many mysteries about Florida's red tides remain, such as exactly how a bloom ends, and how to mitigate or control its negative effects.

"This exercise confirms the need for additional support to send gliders out monthly to do this kind of monitoring and to continue our multi-institutional collaboration on seasonal and short-term predictions," Weisberg said.

The study was supported by NOAA's Prevention, Control and Mitigation of Harmful Algal Blooms and the Southeast Coastal Ocean Observing Regional Association's Integration Ocean Observing System programs as well as NASA's Ocean Biology and Biogeochemistry program. Additional support was provided by USFCMS, the State of Florida and by the National Science Foundation's eXtreme Science and Engineering Discovery Environment program for high performance computing.

Resources:

- Visit https://bit.ly/2WSaROZ to read or download the full research article, "The Coastal Ocean Circulation Influence on the 2018 West Florida Shelf *K. brevis* Red Tide Bloom," which this article summarizes.
- View a video of the March 28, 2019, Pinellas County and the City of Indian Rocks Beach Red Tide Summit at https://bit.ly/2JrZtGv.



A composite indicating concentrations of the red tide *K. brevis* cells along all three Florida coasts in September 2018.

RED TIDE TIMELINE:

OCTOBER 2017: A red tide manifests off Florida's west coast. It persists through spring and summer of 2018 in the epicenter region.

MID JULY–SEPTEMBER 2018: Loop Current upwelling carries the new 2018 bloom inshore along the bottom, where it joins with the remaining 2017 bloom.

AUGUST 24–SEPTEMBER 17, 2018: USFCMS deploys glider.

SEPTEMBER–NOVEMBER 2018: Tropical Storm Gordon carries the bloom to the Panhandle; the Loop Current carries it to the east coast of Florida.

FEBRUARY 2019: The red tide ends.

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Bobby Ellis

FTGA Past President and member Bobby Ellis has been involved with turf since high school. Bobby says, "I was on the golf team in high school and worked part time at the local public golf course along with another teammate. While growing up, I always wanted to become a pilot in the Navy but, as I played golf and worked at the course, it grew on me more and more every day. While I knew I would never play professional golf (anyone who has seen me play would attest to this), this was a profession that would keep me close to the game I enjoyed.

"At that time, the green industry was in its infancy, so there was not a lot of modern technology such as there is today. This course had quick coupler irrigation and only basic mowing machinery. The hours were long and hard, but I was young, and it was fun, at least at that time," he adds.

"Upon graduation from high school, I decided to attend the Golf Course Operations Program at Lake City Community College. You can only imagine the discussions with my parents on my career change from Naval aviator to a "grass grower," as my dad referred to it. Since he has a Ph.D. in physics, he could not quite understand the lure of golf course maintenance, but he said that it was my decision and he supported me. (At least, that is what he said at the time.)

Bobby recalls his career transition, "After nearly 30 years in the golf course maintenance and construction industry, I moved to the 'dark side' of sales in 2006. This job was selling construction materials to the golf and athletic field industry. Try explaining that to people who know nothing about our industry. They wonder how anyone can sell sand and soil materials in Florida because they think it is the same as selling ice in Alaska." Today, Bobby is an integral member of the Golf Agronomics team, an organization that strongly supports the FTGA.

One of the most important things about Bobby's current job is the ability to help fellow industry professionals. He says, "When I first got into construction material sales, I thought this should be simple. What really is involved with dirt? I found out quickly that even with all my previous experience with golf construction, I did not know as much as I thought I did. I probably should have paid a little more attention in our soils class in college. I enjoy working with people and explaining all the differences in materials, whether it is for a new construction project or maintenance of existing turf. Testing methods of materials is a very detailed science, and most do not know that the slightest difference in materials can make a big difference in the physical performance of their soils. Diagnoses, recommendations and project successes are what make my job enjoyable to go to every day.

"As with any new profession, the more you do it, the more you learn and the better you get at it. I still continue to learn new things almost every day. I still read our trade publications and research information relating to my profession."

INDUSTRY CHALLENGES

"The challenges have not changed much over the years. The turf industry is still challenged by water quality and quantity issues, shortage of qualified labor, budgeting shortfalls and decline of golf rounds. We were addressing these issues when I was FTGA president in the early 2000s. Fortunately, there has been an uptick of interest in youth sports such as soccer and lacrosse, which has led to greater maintenance demands on sports facilities.

"I attended my first FTGA conference in October 1978 while in college and have been a member ever since. I remember seeing a lot of professional turf people at that conference and knew this was a great place to gain additional

turf knowledge. It is amazing how much you can learn from other people's experience. I also received an FTGA scholarship my final year in college, so I knew I needed to give back to the industry that gave me my start. I remember Mark Jarrell asking me to join the board in 1997, and I was placed as chairman of the Scholarship and Research Committee. I really enjoyed this as I got to meet and work with most of the professors at the University of Florida and discuss industry needs, research projects, etc. This was one of the best experiences of my career as you can always learn more no matter how long you have been in the business.

"I want to help people do what is best for their operation and make them successful. The only agenda that I may push is helping anyone do something right the first time. We have technology on our side, and I want to help people use it to their fullest advantage," says Bobby.

SOUTHERN BORN AND RAISED

Bobby was born in South Georgia but has lived in Florida almost his entire life. He says, "Most of my family is from Georgia and they cannot figure out how I turned out to be such a big Gator fan. It sure was fun during the Spurrier era with his record against Georgia. I enjoy watching all sports, especially Gator football. While everything started with golf, fishing is a nice break from the day-to-day grind. I occasionally look back and say, 'What if I had gone to flight school,' but the experiences that I have enjoyed and the many friends that I have made over the years convinces me I made the right decision."

Bobby has been married 31 years to his wife Corky, and they have two sons—Mitchell, 28 and Mason, 26. They have their first grandchild, Nora Grace Ellis, who just turned 10 months old. In addition, he has a nephew who is serving on board the USS John Stennis, with whom he is very close. "My wife and children have accepted the many, long hours I have put in, working weekends and holidays, and for that I am more grateful than I can put into words," he says.

"Our industry is made up of a bunch of people willing to help each other in any capacity needed. I'll always remember a golf pro at one of my jobs telling me how nice it was to see how fellow superintendents worked with each other and easily shared information. That was not the case with his peers and association. I suggested maybe they should learn from us!"

FACT OR FICTION:

Is Lawn Fertilizer Contributing to Red Tide?

By **Matthew R. Taylor, CGCS***; Director of Golf Operations, Royal Poinciana Golf Club; Past President, FTGA*

After the red tide outbreak Southwest Florida experienced during the summer of 2018, many people, including members of the news media, pointed the finger at nitrogen and phosphorus from fertilizer runoff and leaching as the source of the problem.

Concerned citizens spoke during the public comment portion of a recent Fertilizer Ordinance Workshop held by Collier County, and all shared the same opinion. Their solution: Ban fertilizer use in Collier County and the City of Naples during the summer months. Many counties in Florida have bans on the application of nitrogen and phosphorus during the summer months of June through September, which are our rainy months. Ignoring peer-reviewed scientific studies that show summer months are when turfgrasses are actively growing, those municipalities claim that by banning fertilizer applications at that time of the year, pollution from fertilizer running off and leaching will be reduced or eliminated.

HISTORY SPEAKS FOR ITSELF

Before we get too in-depth into this conversation, let's look at the history of red tide and current laws regulating fertilizer use.

Red tide is a naturally occurring living organism, and outbreaks have been documented as far back as the 1840s, long before the coastlines of Florida were populated. The red tide that is so devastating to our coast is *Karenia brevis,* also referred to as *K. brevis*. Red tide first develops 10 to 40 miles offshore, and there is no direct link between nutrient pollution and the frequency or initiation of red tides caused by *K. brevis*. However, once *K. brevis* reaches our coastlines, it can use nutrients, such as nitrogen and phosphorus, for growth. It is important to note that nutrients can originate from both natural and human (anthropogenic) activities, and the amount of nutrients in a water body is complex and dependent on a number of factors.

Collier County, including the City of Naples, has adopted the Florida Department of Environmental Protection (FDEP) Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes. This Model Ordinance does not contain a summertime blackout period because results from an eight-year, $4.2-million FDEP study showed blackout periods during the summer months are not needed. One key feature of the Model Ordinance is the law that regulates commercial (for-hire) applicators that fertilize lawns in our state. Beginning in January 2014, professionals are required under Chapter 482.1562 of Florida Statutes to be certified in the Green Industries Best Management Practices (BMPs) to protect Florida's natural resources from non-point pollution (i.e., fertilizer application). It is important to note that the business is not certified—the actual person pushing the fertilizer spreader must be certified. The applicator has sat through a 6-hour class and has passed a practical exam before legally spreading fertilizer in Collier County and the state of Florida. Additionally, the certification must be renewed every 4 years through continuing education. That professional must also maintain a Limited Certificate for Urban Landscape Commercial Fertilizer Application from the Florida Department of Agriculture and Consumer Services—an applicator's license similar to a pesticide applicators license.

In a recent survey conducted by Collier County Pollution Control, they found that 80% of homeowners in Collier County used a contractor to manage their lawn. In Collier County, there are more than 2,500 Certified Applicators who follow state laws regarding fertilizer applications on home and commercial lawns. Statewide,

Florida has more than 48,000 who comply. My point here is that fertilizer, and its use, is regulated and monitored in Collier County and other parts of Florida. Moreover, these laws were shaped by peer-reviewed scientific studies funded by the FDEP, not industry and special-interest groups.

Golf courses have been exempted from these fertilizer bans and more restrictive ordinances for the most part. We are seen as professionals because many golf course superintendents have advanced degrees in turfgrass science, and we have our own set of BMPs, developed by the FDEP, the University of Florida (UF), the USGA, and the industry. Florida is also the only state in the nation that has a Golf Course BMP Certification Program.

EXAMINING THE FACTS

So, what is the truth? Is lawn and ornamental fertilizer contributing to red tide? In my professional opinion, nitrogen and phosphorus from lawn and ornamental fertilizers are not the problem. However, this is just my opinion. The problem is large and complex and the solution must be based on scientific, peer-reviewed research, not something that makes us feel better or fits an agenda.

Many of you reading this are saying to yourselves, "With as bad as the red tide was last year, all the dead fish and everyone in the media blaming all this on fertilizers, how could someone possibly think otherwise?"

Here is what I do know, and this is based on more than 35 years' experience in Southwest Florida managing turfgrass and landscapes, my degree in golf course operations, being a Certified Golf Course Superintendent since 2005, being certified as an Instructor for the Green Industries Best Management Practices, certified in Best Management Practices for the Enhancement of Water Quality on Florida Golf Courses, a Certified Commercial Pest Control Operator in Lawn and Ornamental, having a Private Applicators License in Lawn and Ornamentals, and having sat through hundreds of hours of continuing education classes: When turfgrass is properly maintained and BMPs are followed, which include the rate of fertilizer application and timing of fertilizer application, the likelihood of nitrogen and phosphorus leaching or running off of turf is negligible. Below are many of the reasons I believe this to be true.

From 2004 through 2012, the FDEP funded a $4.2-million study focused on fertilizer leaching. UF performed this research at three locations: Milton, Gainesville and Fort Lauderdale. The results from this research helped UF improve recommended fertilizer rates and timing, which are reflected in the Green Industries Best Management Practices. The results of the research conclusively demonstrated that when fertilizer is applied at the correct rate and correct timing, nitrogen and phosphorus did not leach in significant quantities. Much of the applied fertilizer is quickly taken up by the turf and used for growth.

Proponents of summertime blackouts speak about runoff and leaching of nitrogen and phosphorus during our afternoon thunderstorms. Runoff is when water "runs off" a site following a heavy rain event, and leaching is when water moves down through the soil. Turfgrass has many well-documented benefits, and one of those benefits is that the thick, dense turf with its fibrous root system greatly reduces both runoff and leaching. If you have ever walked on our lawns in South Florida, you know how thick and dense they are. A dense, healthy turf is key to filtering pollutants from our water. When turf is not provided proper nutrition, it will thin out, leading to a potential increase in nutrient leaching and runoff.

Over the past 10 years or so, most fertilizer blends in Florida have been phosphorus free or contain minimal amounts (the law limits it to less than or equal to 2%). Some of the world's largest phosphate mines are in central Florida, and most Florida soils contain adequate levels of phosphorus. Generally, one of the only times turf needs additional phosphorus is during establishment. The FDEP's

study confirmed this, and fertilizer recommendations across the state reflect this.

WHAT ELSE COULD BE THE PROBLEM?

If the problem is not primarily coming from a fertilizer bag, where else could it come from, and why are those sources not getting attention? Could it be that the quickest, easiest "solution" so that everyone feels better is to ban fertilizer? The issues identified below are not quick fixes, they are involved, and most will be expensive to solve. Let's briefly look at the situation in Southwest Florida.

During the late summer of 2017, we had **Hurricane Irma,** which caused extensive damage to structures and landscapes. It turned the Gulf of Mexico and our estuaries upside down with its extreme tides and heavy seas, turning over years of sediment and making those nutrients available to aggravate the naturally existing red tide. A similar spike in the severity of red tide was observed after **Hurricane Wilma** in 2005.

Urban development over the past 10 years has been staggering. The stormwater from those roofs, streets and parking lots go into the stormwater system, and many end up draining to the Gulf of Mexico or other water bodies. Before the development, rainwater would filter naturally into the aquifer. Rainfall does contain small amounts of nitrogen and, when combined with leaf litter in parking lots and grass clippings not blown off streets or sidewalks, you have nitrogen and phosphorus in the stormwater, all sources of nutrients that did not come from a fertilizer bag.

Septic systems are also an area of concern. An estimated 2.6 million exist in Florida, which is 12% of the entire country's septic systems. For example, Captiva Island, which is north of Sanibel Island, has an estimated 526 septic systems. In many parts of Collier, Goodland and Lee Counties large quantities of septic systems used for residential neighborhoods exist. Across from Royal Poinciana Golf Club, there are approximately 900 septic systems in the City of Naples slated for connection to the city's sewer lines. Although septic systems are efficient at removing biological waste (i.e., fecal coliform), conventional septic systems are not designed for removing nutrients—only removing about one-third of the total nitrogen input. All septic systems have the potential as they get old or are not maintained to leak, either into the aquifer as water tables rise or into the stormwater system. In some coastal areas, these septic-system drain fields are right on

waterbodies, yielding another source for nitrogen and phosphorus that did not come from a fertilizer bag.

Freshwater releases from Lake Okeechobee into the Caloosahatchee River ultimately end up in the Gulf of Mexico or on the East Coast during our summer months, which disrupt the natural ecosystems on our coastline.

Sarasota, Manatee, Charlotte and Lee Counties have summertime blackout periods, and there is zero credible evidence to suggest the bans have helped curtail red tide. A study funded by the Tampa Bay Estuary Program reported in 2015 that at least seven years of monitoring would be necessary to observe any statistically significant effects of fertilizer bans on local water quality. Long-term monitoring efforts have yet to be initiated.

Summertime blackout periods may have unintended consequences. Many may feel that if they cannot fertilize for 4 months during the summer months, they will just "load up" with one large fertilizer application in late May. Fertilizer labels prescribe maximum application rates at any one time for a reason: Research shows that going above those rates could lead to leaching and runoff. Turfgrass and other plants need nutrients, including nitrogen and phosphorus, to remain healthy. By starving the plant during periods of active growth (e.g., summertime), it will eventually lead to weaker plants, increasing the likelihood of insect, disease and weed pressure. This, in turn, could lead to more inputs being needed to keep the plant healthy. In addition, weaker plants will result in less healthy root systems that are not able to take up nutrients. Thin, weak grass stands are not able to reduce soil erosion.

This is not the first time Collier County has looked at blackout periods or summer bans for nitrogen and phosphorus. In 2011, the Everglades Golf Course Superintendents Association along with professors from the UF and others attended countless meetings with Collier County to offer a science-based viewpoint. When it came time for the Collier County Commissioners to vote, they chose to stick to the science and approved the State Model Ordinance with no summertime blackout period.

During the months of meetings, we were asked several times why the golf courses would be against such an ordinance that would exempt them. The answers are simple. First, we are confident that these blackout periods will not work and have not worked in other counties. When they don't work, special-interest groups will come back to the municipalities and claim that it is not working because we do not have a total ban. We now need to include golf courses to make this work. Secondly, the bans do effect golf courses and their communities. While the golf course itself gets exempted, our club grounds, common grounds and entrances are not exempt from the summertime bans on the use of nitrogen and phosphorus. Lastly and most importantly, summer blackout periods and bans are just not logical or based on anything other than emotional responses to a situation that does not produce the intended results. We currently have fertilizer laws and regulations in place to protect Florida's natural resources, including protecting and improving water quality. These laws and rules are based off peer-reviewed scientific studies, to reduce or eliminate non-point source pollution. Each segment of agriculture has BMPs in place to protect water quality in our state. Sod growers, traditional farming, golf courses, the green industry and landscape nurseries all utilize BMPs.

I appreciate you taking the time to read this and, I hope, you now understand there is another side to the story. If you have any questions or would like to discuss this in greater detail, please let me know. I would be happy to meet with you.

This roseate spoonbill preens while wading in the water at Robinson Preserve in northwest Manatee County. The preserve is situated near the mouth of the Manatee River, where it flows into Tampa Bay. The roseate spoonbill, although often confused with the flamingo, is easily identified by its large, rounded beak. Photo courtesy of Mac Carraway. To view his photography, visit www.maccarrawayphotography.com.

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PEOPLE

Unsung Heroes: Spotlight on Yvette Goodiel, South Florida

Sustainability and Commercial Horticulture Extension Agent Yvette Goodiel serves at the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Extension in Martin County. She has revered nature and the environment since her formative years, and her career path allows her to share her knowledge with green industry professionals. She grew up in Eustis and spent weekends with family in and around the Ocala National Forest and Seminole State Forest.

Yvette received a B.S. in biology from the University of Miami and an M.A. in ecology from the University of Kansas. In 2014, she became a Sustainable Agriculture Research and Education Fellow. Today, she is a state-certified Green Industries Best Management Practices Instructor, and she has earned Florida Water Star Certification in Landscape and Irrigation.

Since December 2011, Yvette has been at the Extension in Martin County. In her position, she helps industry and municipal professionals with their horticultural questions, providing UF science-based information to guide their decision-making.

In addition to her day-to-day duties, Yvette coordinated a USDA-funded Food System Feasibility Study, in collaboration with Martin County and the UF/IFAS Florida Agriculture Market Research Center from 2016 thru 2018. She currently works as part of a Treasure and Space Coast team of Extension Agents offering trainings for green industry professionals to obtain or maintain their professional licensing as fertilizer or pesticide applicators, and she is a member of the Florida State Horticultural Society and Florida Association of County Agricultural Agents.

When asked what her job means to her, Yvette responds, "What I most love about being an Extension agent is helping people find the information they need to manage their operations sustainably so they can stay profitable while protecting our natural resources and providing societal benefits in employment and quality of life."

Gary Bradshaw Joins Sod Solutions as a Florida Turf Consultant

Sod Solutions is excited to announce the hiring of FTGA member Gary Bradshaw to assist in producer relations and business development in sports, golf, residential and commercial segments of the market. Gary is tasked with fostering new partnerships in targeted markets and strengthening existing relationships as well as identifying and creating programs that increase demand for Sod Solutions' line of turfgrasses and products.

"Gary is one of the most respected voices in the Florida turfgrass industry," says Tobey Wagner, president of Sod Solutions. "His knowledge of the industry and the connections he has built over the course of 40 plus years are invaluable. Gary is experienced in residential and commercial turf sales, along with golf and sports. His knowledge and leadership skills are unmatched in the industry."

"I know Sod Solutions well and have worked with them, growing their grass brands for many years," says Gary. "This will be a chance for me to share my experience with others in the industry."

Gary's distinguished 42-year career in the turfgrass industry has taken him all over the Sunshine State. He has worked in the past for Mace Sod, King Ranch and Woerner Turf. For the last five years, he has served as the president of SMR Farms in Lakewood Ranch, Florida.

Governor Ron DeSantis Announces Appointments to the Newly Formed Blue-Green Algae Task Force

On April 29, Governor DeSantis announced the members of the blue-green algae task force at the Hobe Sound National Wildlife Refuge. He appointed five experts: Dr. Wendy Graham from University of Florida, Dr. Evelyn Gaiser from Florida International University, Dr. Michael Parsons from Florida Gulf Coast University, Dr. James Sullivan from Florida Atlantic University and Dr. Valerie Paul, director of the Smithsonian Marine Station at Fort Pierce.

Photo credit: Governor's Press Office.

"The current algae blooms in the St. Johns River and Lake George are a stark reminder of how important and urgent this issue really is," said Governor DeSantis. "My administration is taking another step forward toward addressing this by appointing five internationally renowned and respected scientists to the new Blue-Green Algae Task Force."

The focus of the Blue-Green Algae Task Force is to support key funding and restoration initiatives and make recommendations to expedite nutrient reductions in Lake Okeechobee and the downstream estuaries. The task force will identify opportunities to fund priority projects with state, local and federal funding. These recommended projects will build upon the Florida Department of Environmental Protection's updated Basin Management Action Plans data. The task force will also review and prioritize projects that will provide the largest and most meaningful nutrient reductions in key waterways.

Mac Carraway, Award-Winning Photographer

Mac Carraway won first prize for one of his roseate spoonbill photographs at a juried show for ArtCenter Manatee in Bradenton.

WELCOME NEW MEMBERS

David Bradley, *Locus Agricultural Solutions*
Jason Fewell, *Ewing Irrigation*
James Hamill, *Wipeout Services*
Dexter Hazel, *City of Delray*
Robert Klitz, *Native Way Services*
Erik Miller, *City of Melbourne Parks*
Shannon Morgan, *Turf Keepers Inc.*
William Mumm, *BCC Pelican Bay Services*
Louis Salvemini, *Sunbright Services*
Duncan Stewart-Orris, *Aquatrols*
Donald Williams, *City of Plantation*

EVENTS

CEU Round-Up

June 26, 2019 | 8:30 am – 4:00 EDT
June 26, 2019 | 7:30 am - 3:00 CDT
The CEU Round-Up, co-sponsored with the University of Florida, is scheduled a month earlier than usual this year.
Visit www.ftga.org/page/CEURoundUp to view the locations, agenda, price information and to register for an event near you.

FTGA Annual Conference & Show

Mark your calendars for August 12–14, 2019. Attendee brochures have been mailed, and additional information is available online www.ftga.org/page/CSAttendee. Registration is also

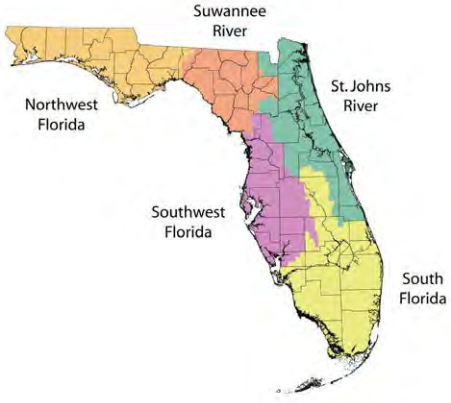
available online for the annual Conference & Show at that link. To view sponsor and exhibitor information and to reserve a sponsorship or booth, visit: www.ftga.org/page/CSExhibitor. **Group hotel rates expire 6/25/2019.**

Stuart Leventhal, CGCS, Interlachen Golf Tournament Wrap-Up

The 31st Stuart Leventhal, CGCS, Interlachen Golf Tournament raised $4,824.99 for research sponsored by the Florida Turfgrass Research Foundation. If you happen to run into Bryce Gibson or Stuart Leventhal, please pass along a thank you.

SOUND BYTES

Florida Water Districts



To find contact and other information on the water district in your county, visit www.bit.ly/313JvHZ.

Lightning Safety

It's summer, and that means lightning season. Although lightning kills only about 10% of the people it strikes, it can cause physical and mental complications that victims must face for the rest of their lives. For those who spend time working outdoors, knowledge of lightning, its effects, and ways to protect others and themselves from this potentially life-threatening hazard is mandatory. View tips for staying safe at http://edis.ifas.ufl.edu/ae526.

A Homeowner's Guide to the Living Shoreline Permit Exemption

Living shorelines are coastal shoreline stabilization interventions that rely on natural elements such as native vegetation and oyster reefs to protect property. The U.S. Army Corps of Engineers, among other entities, regulates the placement of living shorelines through a permitting process to ensure project activities do not conflict with the public interest. In this nine-page guide, authors Savanna Barry, Sara Martin, and Eric Sparks provide you with example text for each application section that you can adapt to your needs to assist you in filling out the permit application. The guide is published by the UF/IFAS Sea Grant College Program. To view the guide, visit http://edis.ifas.ufl.edu/sg189.

Photo Credit: NOAA.

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