

# PIPELINE

THE OFFICIAL PUBLICATION OF THE FLORIDA IRRIGATION SOCIETY

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# PIPELINE

The Official Publication of the Florida Irrigation Society

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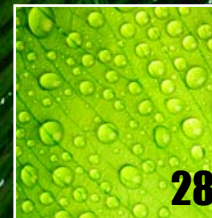
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## President's Letter

It has certainly not been business as usual for the irrigation industry this summer season. From talking with our members, most have more business than in previous years. That is the good news. Most also find that they have less employees than in previous years due to COVID-19 and/or are less productive because of safety guidelines that must be followed. Our suppliers and manufacturers have also had their challenges but have come through in Florida to keep our contractors in business. A big shout out of appreciation to each of them for their cooperation.



**Tom Allen**  
**FIS President**

The Society has been working on behalf of our members and the industry to stay as normal as possible this year with our education programs and social activities. The annual Water Summit was successful even with lower attendance. It allowed contractors to obtain their 14 hours of continuing education for license renewal and those with certifications to obtain their needed CEU credits. I want to thank those that made it possible this year...the attendees...our sponsors K-Rain and SWFWMD...our speakers who came in person to the Summit and those who modified their presentations for live video.

This past weekend the FIS Annual Bull Bash Fishing Tournament was held at Pirate's Cove Resort & Marina, Stuart. Although delayed from its original date in May, it was a welcome relief to the crazy work schedules of contractors and suppliers. Sponsors really stepped up to make this a fun event. A huge thank you to **Horizon- Fleet Sponsor; K-Rain-Captain Sponsor; Florida Coast Equipment-First Mate Sponsor; Hydro Rain and Everglades Equipment Group-Second Mate Sponsors; Kelly Tractor-Trophy Sponsor; TWC Distributors-Treasure Chest Sponsor; and Hunter Industries-Bucket Sponsor.** There were more raffle prizes this year than fish caught but it was a great event anyway. On-site volunteers were Deb Joneck (Florida Coast Equipment) at registration desk and Larry Lentz as Weigh Master. I also want to thank the hardworking Committee for organizing the tournament: Steven Jenkins, Tom Super and Dustin Hoffman (K-Rain). They are already back to work planning the 2021 event!

Your organization will continue to work to improve the industry and FIS through these challenging times. Your Board of Directors and Committees are meeting and planning on a regular basis and will be bringing some innovative ideas to our members in the near future. Watch for announcements.

Members, thank you for your support this year. Pipeline Reader, if you are not a member, I encourage you to sign-up today. The irrigation industry is a distinct trade/profession from landscaping and plumbing trades. Your voice and participation in the direction our industry takes on water conservation and quality, availability and training of employees and management, licensing, uniform codes, etc., is needed. Contact me at [tom@clm-landscaping.com](mailto:tom@clm-landscaping.com) or the FIS office at 727-209-1595 for more information or a membership application. ■

## Florida Irrigation Society New Members 2020

**The Florida Irrigation Society extends a warm welcome to its newest members\* -**

Casey Berry III, Outdoor Expressions Orlando

Chad Brown, Southern Sprinkler and Irrigation

Terry Campbell, Brightview

Adam Castellano, Living Systems Design

Josh Dillon, Kenry and Company

Matthew Floeter, Aqua Cops

Bobby Hartwell, Soflo Sprinklers, LLC

Derrick Lucroy, North South Supply

Charles Mayes, Coquina Landscape Management, LLC

Michael McCabe, Grow with the Flow Irrigation & Landscaping, LLC

Wilmer Menjivar, Manpower Irrigation & Services, Inc.

James Pegg, JB Landscape and Irrigation Maintenance, Inc.

Daniel Rowland, DTSM Irrigation Corporation

Todd Ruggles, FieldStone Landscape Services

Rex Zimmerman, Exotic Designs Landscape Services, LLC

**\*May 1-August 14, 2020**



**Want to join the Florida Irrigation Society?**  
**Visit [www.fisstaterg.org](http://www.fisstaterg.org) and download the membership form.**  
**Once complete, email to [info@fisstaterg.org](mailto:info@fisstaterg.org) or**  
**fax to 727-578-9982.**

# THE **TRUTH** IN IRRIGATION WATER MANAGEMENT

## Understanding the Big Picture

**FACT #1** *Irrigation is to be a tool in horticultural water management.*

**I**rrigation systems are horticultural water management tools that replenish the soil profile with water previously used (evaporation and transpiration) by the landscape when it has not been replenished through effective rainfall patterns.

Therefore, when properly designed, installed, managed, and maintained, these horticultural water management tools will provide just the right amount of water to the landscape. It is important that water is only added where needed, in the quantities needed, and at the time needed.



**Larry Cammarata**

Lead Sustainability

Consultant

Certified Consultants Ltd. *(continued pg. 6)*

lcammarata@

plantsoilwater.com

The key words here are “properly designed, managed, and maintained”. Most irrigation companies do not understand soils, plants, and microclimates, and therefore, cannot properly design, manage, and maintain. Even the best equipment cannot help companies that lack this knowledge.

The correct course of action is to create hydrozones, or valve groups, for specific types of plant material based on their water requirement. Anything different will always lead to plant decline and death. Any surviving plants will require great amounts of Plant Health Care (PHC).

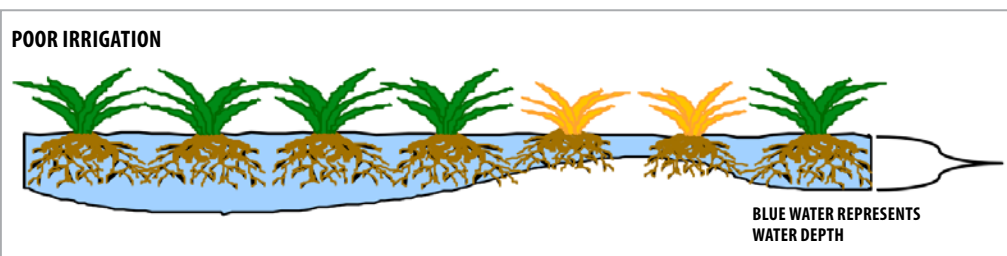
**FACT #2** *Irrigation systems distribute water poorly without proactive management.*

Irrigation systems rarely, even with the best designs, provide distribution uniformity (DU or uniformity in coverage) of greater than 75%.

Certified Consultants has audited over 500 irrigation systems with uniformity rarely exceeding 39%.

Without proactive management of an irrigation system, it will always be in a state of decline. All service work will add to this decline unless the best installation techniques are used to install the best equipment (not pertaining to a particular manufacturer). These techniques will produce long-lasting results.

It is important that these systems (installed by experts) are not "serviced or patched up". When this is the case, there will be a rapid drop from 75% DU to 25% DU within the first few years. No more "patching"! Only corrections, improvements, upgrades, and water savings.



**FACT #3** *Irrigation cycles are meant to replenish the soil profile.*

Irrigation replenishes the soil profile of water used by the plant from evaporation and transpiration. It is not simply for watering the turf or plantings.

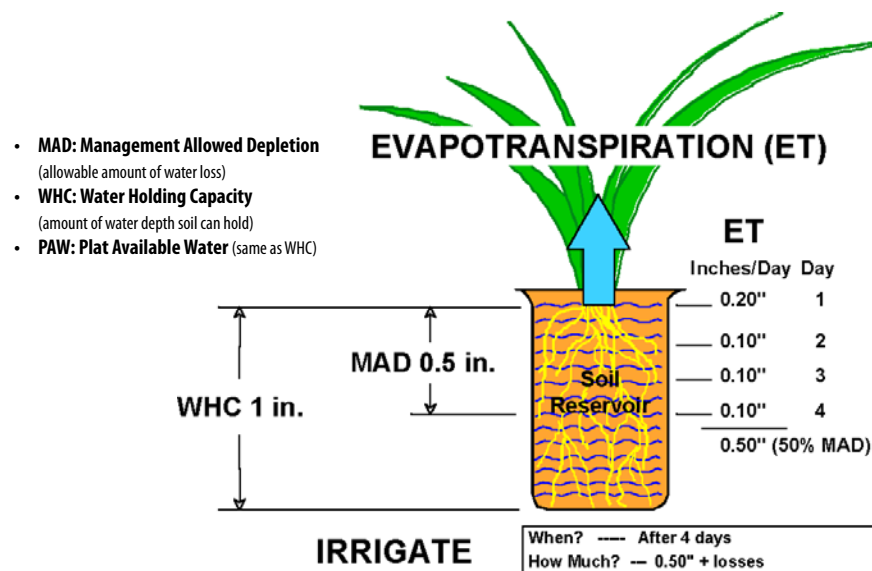
There must be a delicate balance between monitoring rainfall and weather and adjusting the irrigation system. Certified Consultants uses weather-based controllers to achieve this balance.

Irrigation systems are not designed to care for all the water demands of a plant. They are supplemental tools. They only add "enhancement or enrichment".

An irrigation system is:

- A supplemental tool
- A poor distributor of water
- Meant to add water to the soil in addition to the water provided by rainfall

Keep in mind, irrigation systems cannot save the landscape in a drought.



(continued pg. 8)



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**FACT #4** *Proper management of irrigation systems is just as important as uniformity.*

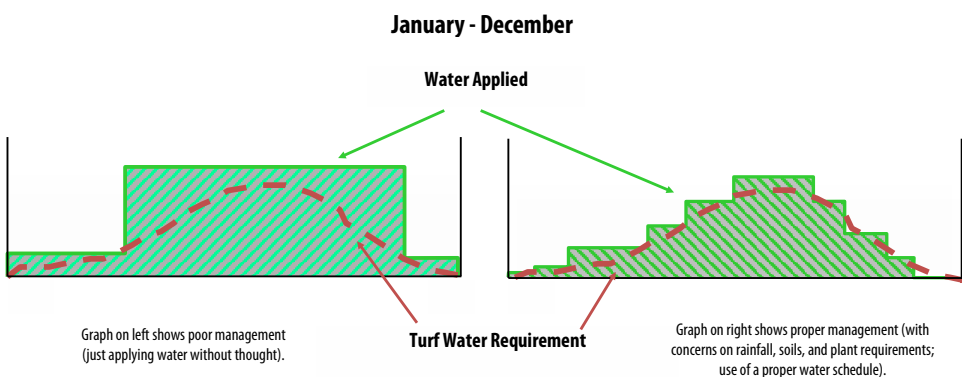
Even if uniformity is reached, the irrigation system will be a failure unless it is properly scheduled.

Certified Consultants' horticulture-based water schedule focuses on:

- Geographic locations (where the system is operating)
- Mowing days
- Micro-climates
- Plant types
- Soil types
- Water time restrictions
- Seasonality
- Sprinkler types (only at the very end of the process)

A properly scheduled irrigation system will:

- Provide the best balance of air-water-soil so the root systems will expand and flourish
- Encourage plant root development (not root decline due to over-watering)
- Reduce water use and save money



**FACT #5** *Drought preparation can be accomplished through proper water management practices.*

If the irrigation system is operated correctly and properly managed, then the landscape will have a higher drought tolerance. It will maintain health and vigor for a longer period during drought. This is in comparison to a landscape with an irrigation system that:

- Indiscriminately throws water (does not differentiate between plant materials)
- Poorly schedules horticultural activities
- Is only "patched" versus corrected, improved, or upgraded

When a drought occurs and depletes the upper profile of Available Water (AW), it is best to shut the system down and work to manually care for the trees and shrubs.

In most cases, perennials (if not shallow-rooted from over-watering) and ground covers will be fine during a drought.

Turf will go dormant and die. An irrigation system will not save it.

**SUMMARY**

Learn to proactively care for an irrigation system by being sure it is modified or designed from a horticultural perspective. If this is not the case, identify where and why there is poor care and what the outcomes are or will be. Use this to craft solutions. An effective irrigation system must be managed regularly so that it is continuously improved. Declining systems require these improvements and corrections. ■

# DARK SKY



The International Dark-Sky Association (IDA) was founded in 1988 by the professional astronomer David Crawford and physician Tim Hunter. The IDA's mission is to protect and preserve the nighttime environment and minimize light pollution through the use of high quality outdoor lighting.

Light pollution is caused by lighting that is not properly shielded and causes glare. Up lighting shining into the night sky above the horizon, according to IDA, causes what is known as sky glow.



**KEVIN SMITH**  
NATIONAL TECHNICAL SUPPORT  
AND TRAINER  
BRILLIANCE LED, LLC

kevin.smith@  
BrillianceLED.com

So how does this affect all of us in the landscape lighting business? It is important for all of us to be aware of staying dark sky complaint. Many homeowner associations have dark sky ordinances in place. Some cities have also embraced these practices. When working in such neighborhoods, it is good practice to check the community rule book and/or meet with the city lighting inspector. This will provide a clear guideline of the regulations required. Checking in and keeping open communication with the inspectors on a semi-annual basis can keep a contractor informed of any changes in the regulations.

*(continued pg. 12)*

For commercial path lighting, the use of a fully shielded fixture (light only directed downward with no adjustability) is normally the requirement in these communities.

This would also be required on architectural lighting such as a wall pack or sconce. The illumination of walls, signage and monuments are also allowed as long as the light is directed on the object and not facing upwards into the night sky.

LIGHT TO PROTECT THE NIGHT		  
Five Principles for Responsible Outdoor Lighting		
<b>USEFUL</b>		<b>ALL LIGHT SHOULD HAVE A CLEAR PURPOSE</b> Before installing or replacing a light, determine if light is needed. Consider how the use of light will impact the area, including wildlife and the environment. Consider using reflective paints or self-luminous markers for signs, curbs, and steps to reduce the need for permanently installed outdoor lighting.
<b>TARGETED</b>		<b>LIGHT SHOULD BE DIRECTED ONLY TO WHERE NEEDED</b> Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.
<b>LOW LIGHT LEVELS</b>		<b>LIGHT SHOULD BE NO BRIGHTER THAN NECESSARY</b> Use the lowest light level required. Be mindful of surface conditions as some surfaces may reflect more light into the night sky than intended.
<b>CONTROLLED</b>		<b>LIGHT SHOULD BE USED ONLY WHEN IT IS USEFUL</b> Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.
<b>COLOR</b>		<b>USE WARMER COLOR LIGHTS WHERE POSSIBLE</b> Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.

Courtesy of IDA

Communities may allow for some actual up lighting, however there will likely be a limit on the lamp size and color temperature. Shields to block any side glare may be required. The contractor may also be given a maximum lumen or foot candle limitation that will be checked by the inspector.

Being proactive and understanding the regulations ahead of time will give the contractor or designer the proper credibility when bidding projects with dark sky requirements.

To learn more about the IDA, visit their website at [darksky.org](http://darksky.org). ■

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## Sales & Business Spotlight

the Importance of Good

# Communication, Relationships, & Competition

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## COMMUNICATION

**T**here are so many words that are important for you to know in business. This one is important to your entire life! Communication, or lack of it, certainly causes more problems than too much communication. Making sure you understand the definition of communication is vital to using it effectively. My Webster's Dictionary gives three definitions in this order: to give or exchange information; to have a meaningful relationship; to be connected. My experience has shown that all three need to be taken together to achieve full impact.

You have heard the adage, "Selling is Telling." All too often we assume we are communicating when we are telling someone else something. But note three key words in the definition: exchange, relationship and connected. This implies, and gives you, the key ingredient to communication done well – both sides participate. The most successful communication consists of an exchange of information, or conversation.

So even if your situation requires giving information, keep in mind the word exchange, and ask questions to confirm your information was received and understood as you intended. This will make a big impact on your success in sales, leadership, parenting, coaching – in other words, on your life!

## CREATING A RELATIONSHIP

The word relationship is used so often in sales it has almost lost its meaning, and certainly its impact. However, it has not lost its truth. The most successful long-term or career sales people become so through creating relationships with their customers, which simply means they connect. Given enough time, it is easy to eventually find an area of common ground to establish a connection with someone. When there is the opportunity for in-depth conversation over a beverage, you will inevitably discover an area of common interest or a shared friend.

Sometimes, there is not time, you have minutes or even seconds to break through to a level of connection with someone you just met. How? By starting off with a gift. Most people love a gift. The way to get over the awkwardness of giving a gift to a complete stranger is by making it useful. First time meeting a homeowner to sell a lighting job? Gift them a guide for choosing a professional contractor and things to look for when choosing landscape lights. This is useful for them, helps create a quick point of connection between you, and establishes you as a partner in helping them make a good decision.

*(continued pg. 16)*

This is one quick example, and should be used to stir your own thought of gifts you can use to open new doors and establish lasting relationships.

## COMPETITION

So I was spreading a pile of dirt. Okay, 64 cubic yards of dirt. And as the tractor wasn't arriving until after lunch, I thought this would be a good workout. In my younger days I would have attacked the pile with zeal and soon been taking a break. At my current age, I steadily took one shovel load at a time and sent it in the general direction I wanted it. The first break was when the first 16 yards was spread.

The moral of the story is slow and steady sometimes really does win the race. The easy, quick route to facing your competition is to talk bad about them, tell your customers what poor quality product they use, and how their work is substandard. Like attacking that pile of dirt, this often leads to a short win with a long break until the next one.

Taking your time to explain what you do, how you do it, why you do it that way, and the excellent results it produces is positioning yourself above most of your competition. In the same way explain the product you use, how you use it, why you use it, and the excellent results you get from it. This approach to selling, not bashing your competitors, sets you up for the long game. And the last man standing is the winner. ■

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# Florida Irrigation Society

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**Jenkins Landscape Company**

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**Cutters Edge**

2281 College Ave., Davie FL 33317

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Website: www.cuttersedgepro.com



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**CLM Landscaping LLC**

111 West Pineloch Ave., Suite 1, Orlando FL 32806

Phone: 407-722-6500

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# FLORIDA WATER SUMMIT 2020

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**2020**

**BE INSPIRED. LEARN SKILLS. HAVE FUN.**



This year has been a strange year for all of us. It's affected our comings and goings, meetings and events. Florida Irrigation Society's annual Water Summit was a mix of in-person and virtual speakers. All of our sponsors presented commercials in place of having the exhibitor display we typically have every year. Attendees sat at their own tables and practiced social distancing, wore masks, had hand sanitizer ready for us, and attentively listened to the speakers. Overall, FIS accomplished its goal of providing high-end education to irrigation contractors and their techs and furthering member understanding of water conservation.

FIS owes a huge thank you to our sponsors: **K-rain, Southwest Florida Water Management District, Weathermatic and Sunshine 811** for working with us and adapting to the many changes that this pandemic has brought upon us. Also among those to publicly thank are our speakers, some of which were not able to travel down to Florida, but still wanted to be there to support the Florida Irrigation Society. Our off site speakers were Rich Shavell who spoke on 2020 Tax Update: What Contractors Need to Know Right Now; the Green Metrix guys Kris Ashby and Chase Coates on Field Labor Management; Ben Lute and Anthony Tilton from Cotney Construction Law speaking on Subcontracting Do's and Don'ts for Irrigation Contractors and Safety First: New Regulations for Pandemics.

In-person presentations were given by Joseph Swett enlightening us with Who Wants More Customers? Marketing Best Practices. Larry Cammarata who taught two courses: How Not to Use an Irrigation System and Performing Detailed Water Management Audits. Idral Bowen on Irrigation Controller Networking for Dummies.

*(continued pg. 20)*



Summit speaker Robert Bowden



Summit participants Joe Swett and Steven Jenkins

One of our honored speakers had a nice surprise for attendees. Robert Bowden Director of the Harry P. Leu Botanical Gardens was generous enough to give all who were registered for the Water Summit a free pass to see the gardens in Orlando. Robert was present to speak on the topic of New or Underutilized Plants in Florida: A Primer for Irrigation Contractors.

The Water Summit is about bringing irrigation contractors and techs together to network, learn and grow. It is one of the few events in Florida, which offers credits for IA certification and all 14 Contractor License Renewal CEUs in one place. The thing that puts FIS above the rest is that the courses are specifically designed to be irrigation relevant, with a plethora of technical and management courses that complete a wide range of topics for those in the irrigation and water conservation business. FIS is proud to be your one-stop-shop for education, networking and even a little fun!

Speaking of fun, to get the networking juices flowing, we had a couple of exciting games centered on the masks that were mandatory attire at the Wyndham. An entertaining little game with words called Mask Collector Extraordinaire: whoever collected the most masks based on hearing

three key words would win a prize! The other held at our Mask-querade Reception, Extravagant Mask Designer was whoever had the most votes for best-designed mask was the winner! It made wearing the masks and showing them off a lot more interesting.

During the event filled first day, FIS held their Annual Membership Meeting during lunch on Friday, July 17 where members and guests were provided with a review of FIS Committee and Board activity in the past year along with goals for 2020/2021. The Nominating Committee presented a slate of officers for the ballot for approval by the members present.

FIS received great reviews from our attendees on the speakers and on the Water Summit as a whole. Although the restrictions of the Coronavirus made it difficult for everyone to come and enjoy this educational and networking opportunity, COVID willing, we will be back to normal in 2021. Watch for news on the 2021 Water Summit in the Palm Beach area. We will see you there! ■



Summit participant Rich Miller



Former FIS President Scott King (l) and Larry Cammarata



Summit participants in session



The Society's Vice President Randy Heimsoth



FIS BULL BASH FISHING TOURNAMENT

**Florida Irrigation Society**  
Managing Every Drop

# FISHING TOURNAMENT

## AUGUST 21-22, 2020

PIRATE'S COVE RESORT & MARINA · STUART, FL

**T**his year's Florida Irrigation Society Bull Bash Fishing Tournament held August 21-22 in Stuart, Florida was just what the doctor ordered! After being shut-in for so long, getting to enjoy a nice day out on the water in small groups, competing for the biggest dolphin was the fun and relaxation we all needed! Keeping our fishing crews together and distancing during the meal and awards ceremony made for a safe environment and enjoyable time. It was great seeing everyone in person again!

The event started off with the bucket of goodies given to the first 20 registered boats at the Captain's Meeting along with Bull Bash 2020 logoed shirts. Our sponsors were huge contributors to making it the success that it was! With good meals, full buckets, drinks and prizes to go around there wasn't a dull moment.

Trophies, cash prizes, and raffle prizes were all in the mix up on their return to the dock. The trophies this year were the talk of the tournament! Beautiful, shiny pieces of art that everyone envied to have in their home, but only the victors of the 1st place dolphin, 2nd place dolphin and biggest bonito would get to go home with those beauties.



1st place Dolphin: Boat- Valentine, company - Horizon, crew - Shelly Mendenhall (pictured), Roberto Tomas, Jeff Thomas and John Robertson

(continued pg. 24)



2nd place Dolphin: Boat- Hyjenx, Company - Jenkins Landscape Company, winner - Steven Jenkins (pictured right) and Tom Allen (pictured left).

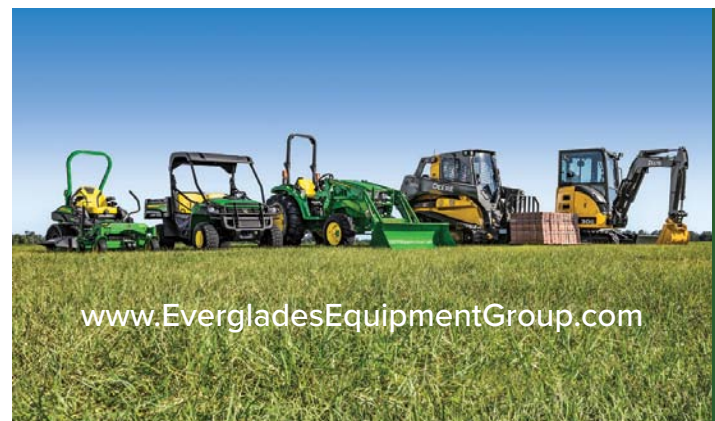


Biggest Bonito: Boat- Schwallfin Therapy, Company - Florida Coast Equipment, crew - Jimmy Schwall, Heather, Corey Schwall and Cody Baker



Weigh in with the crew of Reel Busy

A big thank you to **Pirate's Cove Resort & Marina** for hosting this year's Fishing Tournament. Another big thank you to our Fishing Fleet (aka Tournament) Sponsor **Horizon!** As well as **K-Rain, Florida Coast Equipment, Everglades Equipment Group, Hydro Rain, Hunter Industries, Kelly Tractor Company** and last but not least **TWC Distributors** for their wonderful support and backing of the FIS Annual Bull Bash Fishing Tournament. Thank you to all that joined us this year and we hope that you come and make our 2021 Annual Fishing Tournament a Bullish good time! ■



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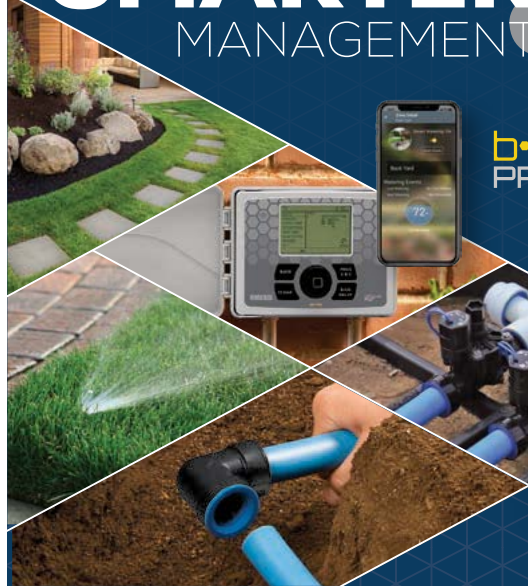
SVL75

# WHAT WERE THEY THINKING?



*A little irrigation humor contributed by our members. Have any "What Were They Thinking?" pictures to share? Email them to [administration@fisstate.org](mailto:administration@fisstate.org).*

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### Florida Contractor License Exam Prep Webinars

Join the Florida Irrigation Society for a virtual exam preparation workshops for the required exams needed to obtain a Florida Irrigation State Contractor license. This format will allow those in remote areas or with limited travel time to participate in the Society's classes designed specifically for irrigation contractors. **Sessions are recorded so attendees can access them after the instruction period has ended.** Extra cost for study books. Visit [FISstate.org](http://FISstate.org) for registration information.

**Business/Finance**

**Cost: \$550/person**

**October 6-8, 2020**

**December 1-3, 2020**

**Technical**

**Cost: \$490/person**

**September 22-23, 2020**

**November 17-18, 2020**



# SIX FACTORS IN GUARANTEED WATER SAVINGS

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The historic drought in California and in the Southwest has many in the landscape industry concerned about the future of our business and desperate to implement strategies to save water. With many western water agencies and recently the whole state of California implementing severe water restrictions, landscape professionals are looking for ways to reduce the water used on landscape to comply with the restrictions while trying to keep landscapes alive.

We at Weathermatic have completed thousands of irrigation system audits in recent years which show that most irrigation systems waste excessive amounts of water. For us, these audits support what the EPA has been telling us all along, that over 50% of landscape water is wasted. Run-off is rampant, sprinklers water in the rain, ET and soil moisture sensors have been turned off. All this leads to one glaring conclusion, current irrigation practices have not gotten the job done.

So with all the irrigation water conservation training and education and innovative technology by manufacturers over the last decade, why do we as an industry continue to struggle with saving water?

In the discussion which follows, I will answer this question. With the many factors affecting how an irrigation system performs and the tight bidding environment for landscape maintenance services, the answer can be allusive. The good news is, with a thorough understanding of smart irrigation and how to take advantage of the tools now available in the industry, you can just about guarantee your client water savings.

Not everyone will agree with what I present but my goal is to inspire greater discussion concerning the current state of the irrigation industry and what we can do about it before it is too late.

The quick answer to the question above is simple...The failure to save water in any landscape is a direct result of not accounting for the six factors which make an irrigation system efficient.

So let's get started... Weather-based irrigation scheduling utilizes a local weather source to recalculate sprinkler run times daily based on local weather conditions. The measurement for this calculation is called Evapotranspiration or ET for short. ET is calculated from the amount of water that evaporates (Evapo) and the amount of water a plant uses (Transpiration).

## Factor #2 USE WEATHER- BASED IRRIGATION SCHEDULING

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There are a multitude of studies that prove the using ET irrigation scheduling save anywhere from 20-30% of your irrigation water when compared to a conventional programmed controller however the outcome for most has been very different.

Let's use California as an example. Since the creation of the California Model Water Efficient Landscape Ordinance (MWELO)<sup>1</sup> in 2009, which requires "smart control" for all new projects in excess of 2,500 square feet of landscape, the use of ET-based scheduling has not worked.

In fact, the MWELO requirement and other legislative actions such as the California 20x2020 Water Conservation Plan<sup>2</sup>, and Governor Jerry Brown's Drought Emergency<sup>3</sup> announcing voluntary water restrictions in 2014, have not done enough to avoid the severe drought currently gripping the state. This has led to further restrictions on landscape water use as the drought worsened. With Governor Brown's April 2015 Executive Action<sup>5</sup> came a number of additional requirements and water restrictions which have the rest of us watching. These restriction include 8%-36% water use reductions, prohibitions for run-off when using potable water, not watering 48 hours after a rain event, and fixing broken sprinklers within reasonable time after notification.

Local water agencies have responded by implementing a wide variety of water restrictions in an effort to insure they achieve the state mandated water reduction. These include 2 and 3 days a week allowed watering, daytime no water windows, and severe penalties for run off from poorly managed run times and broken sprinklers.

To many in the California landscape industry, this is the death knell for smart controllers because they believe the only way to manage irrigation with these strict restrictions is to water as much as we can on the assigned days and accept the idea that the new green is brown (no pun intended). Maybe leaning it to the South will make it more accurate?

Not using smart irrigation to manage these irrigation systems in a drought is a missed opportunity to make the irrigation systems smarter and save more water. Even in a severe drought, weather-based irrigation scheduling is still far better for the landscape than dumping the same amount of water on it each watering day. Watering the same amount each watering day is unhealthy for the plants and often leads to run off which leads to stiff fines.

## Weather-based Irrigation Scheduling Doesn't Work for a 2-Day a Week Water Restriction

There is an assumption among irrigation professionals that a 2 day a week watering schedule with a 1,214 hour water window isn't enough time to "catch up" using Evapotranspiration. This assumption is flat out wrong. The best thing we can do as an industry is to take advantage of the tools we have available in order to implement the best irrigation practices possible. This will demonstrate to all those who are watching, that we are irrigation professionals.

**Still not a believer?** Let's take a worse case example. Let's say we have a property that is 100% cool season turfgrass (no shrubs) which is being irrigated with a 24 station controller that has 12 zones using spray heads and 12 zones of rotors. It is the middle of August and the average high temperature for the week is 100 degrees and a low temperature of 72 degrees. Our site is located in a semi-arid climate similar to many of the cities in the Inland Empire of Southern California.



**Maybe leaning it to the South will make it more accurate?**

*(continued pg. 32)*

## How Much Irrigation is Needed (assuming no rain) for the Week?

Finally, let's assume we have severe water restrictions in place for our site; 2 days a week allowed watering and an 8:00 AM to 8:00 PM no watering window.

Using a real time ET-based controller like the Weathermatic SmartLine we can irrigate to 100% of ET and still fit within the water restrictions:

- 100% cool season turfgrass
- 24 station controller (12 spray head zones, 12 rotor zones)
- No water window – 8:00 AM – 8:00 PM (12 hours)
- Water allowed – 2 Days a Week
- 7 days at 100 degrees
- No rain events

The total Irrigation needed for 24 zones is: **46 hours, 33 minutes**. The total run time of 46 hours, 33 minutes divided by 2 days is: **23 hours, 16.5 minutes (each day)**.

The run time per day of 23 hours, 16.5 minutes divided by running two simultaneous programs is: **11 hours, 38.25 minutes**

Also assuming we have some slope conditions and heavy clay soil, our smart controller will need to cycle the run times to prevent run-off so our 11 hour 38.25 minutes irrigation cycle with a few zones using Run/Soak will just fit into our 12 hour window.

**Still not a believer?** Let's take the alternate approach to our scenario above (2 days a week for the maximum allowed irrigation of 12 hours) and set our controller to operate a standard (non-ET) schedule. What happens when the average temperature (average ET) in the weeks prior or the weeks that follow drops to 90 degrees?

- The total Irrigation needed for 24 zones changes to: **39 hours, 38 minutes**
- Total Run time is 46 hours, 33 minutes divided by 2 days is: **19 hours, 49 minutes (each day)**

- Run time per day is 19 hours, 49 minutes divided by running two simultaneous programs: Our total irrigation run time per day per program is: **9 hours, 54.5 minutes**

By watering for 12 hours, your irrigation system is now applying 17.4% more water than is needed thus drowning your plants. Unless you as a maintenance provider are prepared to drive to the site to reprogram run times on a daily basis, you will be wasting water and drowning your landscape every time the daily temperature drops 10 degrees.

## With the High ET in My Area, My Smart Controller Can't Ever Seem to Catch Up

Let's take a different scenario where ET doesn't seem to be able to catch up over a long hot summer. In these cases there are only two options regardless of whether or not you are using smart control. Either you let all the plant material stress (from being under watered) or you make the decision to prioritize your landscape plant material by sacrificing some of your less important plants or turf areas in an effort to save more valuable landscape assets. The difference in using smart control or not in this scenario is important because with a standard programmed schedule you



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won't know when you have reached the "I can't catch up" threshold. Conversely a good weather-based system will alert you to this fact.

On a side note, we are seeing many more examples of the "I can't catch up" scenario today than we have in the past due to the growing use of rotating multi-stream type nozzles. Essentially we are sacrificing the benefits from good ET-based scheduling for the sake of eliminating run off or as someone once told me "my plants may be dead but at least I won't have run off."

## ET Doesn't Work

Over the years, many of us have heard comments from irrigation professionals who believe ET controllers simply do not work. These naysayers think they are better at calculating water saving run times than the technology built into the ET controller. There is no doubt that most of these individuals have had bad experiences with ET-based scheduling. The cause of their grief is not the result of ineffective technology, rather it is a direct result of what the software industry refers to as "garbage in, garbage out."

To set up an ET-based schedule, a number of variables need to be entered for each zone to correctly calculate ET-based run times. The problem arises as a result of where the data for each ET-based zone used by most irrigation programmers comes from. Think about it for a second... where do most people get the precipitation rate information for a zone of spray heads? If you're like most, you'll simply flip open the irrigation manufacturer's catalog and look up the nozzle and pressure for your particular zone and enter the precipitation rate you see on the page. It is highly unlikely, and impractical, that anyone does a complete water audit of every zone so they can calculate the correct PR for each zone. We then do the same for plant factor, soil type, root zone depth, exposure, slope, plant density, etc. In other words we guess. So at the end of the day, we enter information needed to run our system using weather based ET and are surprised when the system calculates incorrect run times based on the data we arrived at by guessing.

**Let's take this a step further.** What happens when we get a call from a client of a property we maintain complaining about some dry or stressed turf area which is being watered by a controller using ET which we set up using data derived from a catalog? In most cases, the irrigation technician will drive out to the site and reprogram the controller to "fix" the problem. What is the easiest way to "fix" the problem? We take the controller out of smart mode because there isn't an easy way to increase run time without "tweaking" the incorrect data. We then program the zone for 20 minutes per cycle for 4 days per week in an effort to "green things up again" with the intention of coming back later to attempt to figure out why the ET program isn't working. The only problem is we don't ever go back to figure it out. Thus most smart controllers today are running in non-water saving Standard (no ET) mode even though the goal of installing a smart controller in the first place was to save water.

**So what's the solution?** We water conserving professionals need to improve the accuracy of the ET variables. This requires a bit more homework ahead of time and someone who has at least a basic knowledge of irrigation scheduling and sprinkler performance. Some smart controllers, like Weathermatic's SmartLine, have taken this a step further by creating a simple way to "fine tune" an ET-based schedule. Weathermatic uses a single adjustment whereby a user can quickly increase or decrease an ET-based run time to accommodate subtle differences in an individual zone's water needs. With these simple to use tools, there really isn't an excuse to not use ET-based scheduling.

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As California is learning, irrigation professionals must take the time to determine the correct data needed for ET-based scheduling, better train irrigation techs and teach our staffs to keep it in ET mode or risk losing our ability to manage water appropriately through draconian water restrictions.

Lastly, since when did we think putting an established landscape which has been over-watered for 20 years into ET mode in a single day during the heat of an average August day was a good idea? Yet this happens to many of our existing landscapes causing unneeded stress to the plant material and irrigation techs trying to explain why ET doesn't work. As your mother used to tell you "everything in moderation." Historically over-watered landscapes need to be weaned off of being over-watered over the course of weeks if not months. A moderate approach will lead to less stressed plant material, encourage deeper root growth, healthier landscapes, and of course happier customers. This means that you will have to allocate the time to "fine tune" any system that has been retrofitted on an over-watered established site.

The bottom line is weather-based irrigation is the best tool for reducing water waste and managing the irrigation system in a drought if set up and maintained correctly. ■



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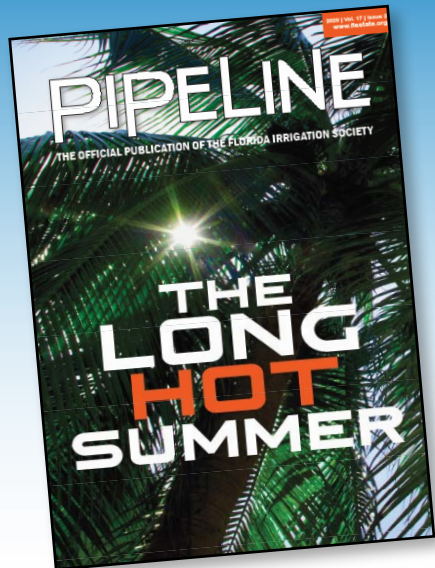
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