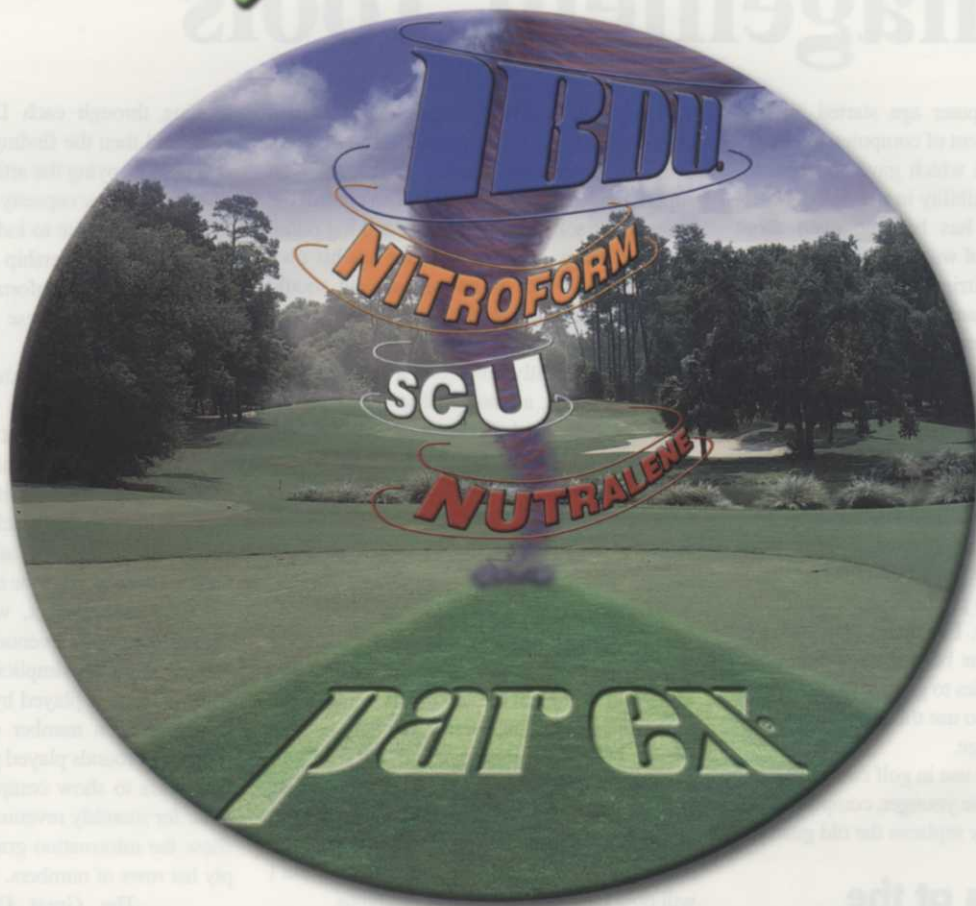


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# Computers As Management Tools

The computer age started on golf courses with the advent of computerized irrigation control systems which gave superintendents tremendous flexibility in managing watering cycles, which has become even more important in a time of water restrictions.

Beyond irrigation, computers are proving to be important tools for personnel and payroll management, equipment record keeping, budget preparation and presentation, GPS mapping and, most of all, rapid communications.

Superintendents are experimenting with digital photography for documentation of projects and for show-and-tell sessions with green committees and owners. Typing skills seem to be the major limitation to many superintendents who were products of the traditional school of agronomy. For them, conversion to the computer age has been slower. You don't need bells and whistles to grow good turf, but it never hurts to learn to use the latest technology to your best advantage.

Computer use in golf course maintenance will grow as the younger, computer-literate generation slowly replaces the old guard.

## Computers at the Great Outdoors Resort Getting Computerized

My use of computers in the everyday operation has increased significantly the past 11 years at The Great Outdoors. When I started here in 1990 everything was on paper and filed somewhat neatly in cabinets. The irrigation was run on a Toro Vari-Time system and the need for a computer was minimal.

However as things progressed, I realized that I could be more efficient with the aid of a computer and that my presentations of budgets or proposed employee pay raises could be improved. It wasn't until 1993 when the course irrigation was re-tubed and Toro Osmac was installed that I had my first office computer. It was a Magitronic 386, 35 MHz with a 30 MB hard drive. I upgraded the memory and hard drive over the next few years.

As I started to utilize the computer more, its limitations were glaringly apparent. It wasn't until 1997 that we replaced the computer in order to run the newer Osmac version

4.07. This was a 233MHz with a 2.4 GB hard drive and 24X CD purchased through Toro. This computer now resides in the assistant superintendents office where he can control the irrigation, track employee hours and log pump meter readings, etc. My assistant has his own Internet access with his own e-mail and, should the mechanic need to access the Internet, he does so on that unit.

I recently purchased a new computer for my office, a Compaq Presario 1.1 GHz with 25 GB hard drive, 128 MB RAM, rewritable CD drive, DVD drive and floppy. My printer is the Hewlett Packard PSC 500 — a flatbed scanner, color copier and printer all in one.

## Software Applications

I originally started out using Microsoft Word and the Microsoft Works suite, then went to Word and Excel and now back to Works. I had a few problems moving files over to this new computer and associating data files with their new format. The only real problem I had is that Works does not import the graphs I had in Excel format; the data is available and I will now have to reproduce new graphs.

My e-mail files were all in Netscape Communicator and now I am using Microsoft Outlook. The email address book can be imported but I found that I had to re-enter all the addresses in some form or other. I am not sure if I will continue to use Outlook or not. Other software includes Adobe Photo Deluxe for my digital camera. I will probably go back to Microsoft Office 2000, as I would like to start using Power Point for presentations and prefer constructing graphs in Excel.

## Management Tool

I use my computer for internal and external business communications via e-mail. It certainly saves time and money compared to mailing or faxing memos and letters. The access to the Internet enables me to keep abreast of industry news and to find articles or information I need. By visiting the GCSAA web site, I can access past *Golf Course Management* articles in the archives which can then be presented to my staff and membership. This is far easier than

looking through each December's directory issue and then the finding the respective issue and photocopying the article.

In my capacity as general manager, I often have to write to individual members and the general membership addressing concerns, giving updates and informing them of new rate structures etc. All these are saved to file for future reference.

I use spreadsheets for a number of tasks. I have made up a worksheet that determines the correct amount of fertilizer per green based on percentage of nitrogen and rate that I wish to apply. This sheet is then given to the applicators who can track the amount needed per green, so they can adjust settings or technique as needed to get the correct amount applied.

My budget, which consists of all departments with revenues and expenses, is on a spreadsheet for simplicity and presentation. I track all rounds played by category and this is displayed in a number of graphs that show number of rounds played per month for the past five years to show comparisons. The same is done for monthly revenues. It is a lot easier to show the information graphically than to simply list rows of numbers.

The Great Outdoors selects an employee of the month, which is voted on by the crew and alternates between the clubhouse staff and the course maintenance staff. The individual receives a \$50 gift certificate and his photo is displayed in the pro shop. I take the employee's photo with a digital camera, download it to the computer and print it as needed.

The digital camera is really helpful in the development of our website. I take photos around the course and clubhouse and email them to the Webmaster for posting on our site. Recently I was faced with a heavy disease problem on my emerging bermudagrass during transition. I was able to take photos and email them to the staff at Syngenta and to the Pace Laboratories in California. The photos along with a disease sample aided in the diagnosis.

I probably spend more time now on the computer than I did before. It does save time putting presentations together and it is a lot easier to edit. The key is having the ability to do much more than just keeping records by using a computer as a management tool.

By Geoff Coggan, CGCS, MG



## Computer Mice... and Men

Computers entered my golf course maintenance life when I returned to Disney World to grow in the Osprey Ridge GC at the Bonnet Creek Club. While I had been banging away on a Macintosh Performa at home to work on the *Florida Green*, I had not used a computer at work until the Rainbird Maxi V controller was installed with the new irrigation system.

The first software with the Maxi system responded to MS DOS operating system which was awkward and cumbersome by today's standards of point and click, but we managed to bungle through until the new software made it easier to navigate to the various screens for reports, schedule changes, and system monitoring.

Soon the secretary's computer was installed and she began keeping personnel time records and submitting them to payroll and writing various memos for us to communicate with the chain of command and other departments within the golf division. When I upgraded my home computer, I brought my old Mac into work to use for work schedules and my own memo writing.

There was company email available on the secretary's computer so we could send and read interoffice memos. The best feature that took awhile to link up was when we could log into the Tee Sheet and check tee times and group reservations so we could plan our maintenance practices to minimize guest inconvenience.

When the new head superintendent, Gary Myers, took over, he wanted us to create a monthly maintenance calendar using Calendar Creator software. We would update it weekly for our staff meetings. By having a printout from each of us, he could track our fertilizer and pesticide applications to see what was going on each course at a glance. By posting the calendar in the office it also gave the crew a heads-up on what was happening and helped the crew foremen assign jobs to work around special situations.

I also developed a Daily Assignment Form which the foremen used to create the daily work sheets, which they still filled out by hand at the end of the day.

We were in the process of selecting software for the shops to track equipment repair,

labor and expenses, but that was still in its infancy when I retired. Our clerks and administrative staff used the computers for personnel and purchase requisitions, but budget reconciliations were still done manually from printed out reports from the bean counters.

I haven't checked with my old colleagues out at the Mouse House lately, but I bet they all have their own desktop computers now and they have come pointing and clicking into the 21st century of business management.

It will be four years since I hung up my L.L. Bean duck boots and we were just beginning to scratch the surface of using computers in golf course maintenance. Today, even if the superintendent doesn't have a computerized irrigation system or a secretary with a desk top computer, there is bound to be one at the clubhouse that is generating memos and reports that cross his desk.

Computers will never replace the trained eye or the artful hand of a gifted turf manager, but they can provide a tool that is useful in manipulating and sharing information for communicating with owners, members and fellow superintendents.

*Joel Jackson, CGCS*

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To keep from creating a cup changing nightmare after aerification, fill the old cup hole with top-dressing mix. Photo by Darren Davis.

## It's In The Hole

Aerification... "A necessity, a customary cultural practice, a tool to improve putting greens."

Unfortunately, no matter what terms we use to define, defend or explain the process of aerification to golfers, it will most likely always fall on deaf ears. Aerification is, and will remain, an unpopular and often despised practice by the golfing public. What you may not know is that aerification can be equally as unpopular to the individual who has to change the hole placement on the day after the greens are aerified. If you have performed the task you know exactly what I mean!

The biggest problem that I have seen encountered by the crew member on "the morning after" is installing the new plug into the old hole that has been crushed or caved in by the aerification equipment. With the aerification process, core removal and topdressing, it is impossible to avoid crushing the void where the previous day's hole had been placed.

Leaving the old cup in, which would help stabilize the hole, is not usually the answer as the aerification tines would inevitably bang

into the metal or plastic hole-liner. There is, however, a very simple solution that you may have overlooked in your operation.

Once the cup has been removed in preparation for the aerification, the existing hole can be filled with soil. By filling the hole, the turf surrounding the void is held in place and the area does not collapse when a tire runs over it. As some of the soil mixture may remain in the hole the following day when a new plug is placed in the void, it would be prudent to fill the hole with a soil mixture compatible to your existing subsurface.

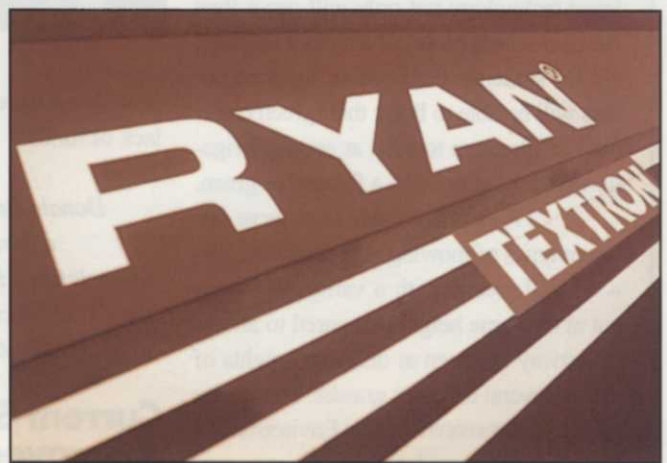
Simple, common sense you say. Yes. Maybe, but I guess having changed many a pin after aerification when the hole was not filled in, I know that I am not the only one out there facing this scenario.

Darren J. Davis  
Director of Golf Course  
Operations  
Olde Florida Golf Club



*Unfortunately, no matter what terms we use to define, defend or explain the process of aerification to golfers, it will most likely always fall on deaf ears. Aerification is, and will remain, an unpopular and often despised practice by the golfing public*





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BENHAM'S BEAT

**Lack of funds leaves research on the table**

The FTGA and the University of Florida along with many members of the FGCSA are working together to make the new research facilities at Pine Acres Plant Science and Education Unit a reality.

Together we are formulating a plan to involve industry companies in helping with the building of the site and showcasing their individual equipment in use at the research facility.

For example, irrigation using the latest technology not only will serve Pine Acres research plots but also as a teaching aid for students. Golf course superintendents will be able to bring their green chairman or directors to look at several irrigation systems at once on a fairway or green.

They will be able to observe different types of mowing equipment on fairways and greens with a variety of grasses cut at the same height compared to another fairway or green at different heights of cut on several different grasses. The ability to use the research at the Envirotron on large turf plots and actual fairways, tees and greens is a wonderful concept. I will keep you updated of our progress in future articles.

Speaking of research, Bobby Ellis and Brian Combs with their committee have completed their recommendations on research and scholarship awards. Their committee works very hard on selecting the grants.

All proposals received are evaluated on a scientific educational merit scale. The quality of proposals is so high and our funding ability is so limited that each year we leave a lot of quality research on the table.

In addition, we are getting requests from our industry for more research on water usage, evaporation losses and determining the percentage of irrigated water being returned to the aquifer for reuse.

We hope the \$5-a-member program, Golfers For A Better Environment, which enables golfers to support turfgrass

research will continue to improve to provide funds for necessary research. In the winter issue of the *Florida Green* I will go into full detail of how that program is needed and funded.

You generally get many chances to read what projects are funded each year in the *Turf Digest* and *Florida Green*. I thought you might like to see a list of research projects that made it through the difficult evaluation process but were not funded because of the lack of funds.



Donald Benham

*Donald Benham is director of public affairs for the Florida Turfgrass Association. He may be reached through the FTGA office, 407-896-8079; fax 407-896-6857; email turf@ftga.org.*

**Current Status of Approved Research Projects**

**2001 FLORIDA TURFGRASS PROPOSALS APPROVED BUT NOT FUNDED**

**Shows the project title, researcher(s), requested amount, and scientific educational merit score on a scale of 1-4, with 4 being high.**

- Spread of mole cricket killing wasp *Larra bicolor* in Northern Florida, J. Howard Frank, \$8,597, 3.0
- Plant-Parasitic Nematodes of Seashore Paspalum, William T. Crow, \$17,350 (8,675 1st yr/8,675 2nd yr), 3.3
- Evaluating Best Management Practices for Landscape Turfgrass, Laurie Trenholm, J. Bryan Unruh, \$9,545, 3.1
- Weed Management Systems for Seashore Paspalum, Barry Brecke, J. Bryan Unruh, \$13,800 (6,900 1st yr/6,900 2nd yr), 3.0
- Variation in Product performance for the control of different Mole Cricket Populations in the Southern USA,

- Eileen Buss J. Bryan Unruh Rick Brandenburg, \$21,620 (10,810 1st yr/10,810 2nd yr), 3.3
  - Impact of Fipronil, Bifenthrin and Acephate on Beneficial Invertebrate and pest Insect Activity in bermuda grass, Eileen Buss, \$22,540 (11,270 1st yr/11,270 2nd yr), 3.4
  - Controlling Sod Worms and Chinch Bugs on Florida Lawns, Eileen Buss, \$5,635, 2.9
  - High Nitrogen Containing Organic Compounds for use in controlling Plant Parasitic Nematodes, J. Bryan Unruh Robert Kinloch, \$12,650 (8,625 1st yr/4,025 2nd yr), 3.3
  - Enhancement of P Retention in Sand Golf Greens & Fairways, J.B. Sartain, \$74,294 (\$24,242 1st/ 24,760 2nd yr/\$25,292 3rd yr), 3.0
  - Influence of Soil and Micronutrient availability on the fungal pathogen *Gaeumannomyces graminis var. graminis* in Turfgrass, Carol M. Stiles, Lawrence Datnoff, Monica Elliot, George Snyder, \$25,875 (14,375 1st yr/\$4,600 2nd yr/\$4,600 3rd yr/\$2,300 for 1/2 of 4th yr), 3.0
  - Development of Proactive Strategies for Environmentally Sound & cost effective Nitrogen Fertilization of Turfgrass, J.M. Scholbert L.E. Trenholm, \$16,675 (\$8,625 for 1st yr/\$8,050 for 2nd yr), 3.8
  - Nonherbicide management of dollar weed in the landscape, Phillip Busey, \$11,500 (\$5,750 1st yr/\$5,750 for 2nd yr), 2.7
  - Development of real time nutrient sensor for Turfgrass fertility management in golf courses, Wonsuk Lee, Tom Burks, Grady Miller, Rao Mylavarapu, John K. Schueller, \$87,170 (\$42,320 1st yr/\$28,750 2nd yr/\$16,100 3rd yr), 3.3
  - Effect of organic Matter in Soil of Insecticides for Southern Chinch Bug Control, Ron Cherry, Russell Nagata, \$5,750, 2.7
  - Thermal Tolerances of Ornamental Perennial Crops, Kimberley Moore, \$11,500 (\$5,750 1st yr/\$5,750 2nd yr), 2.4
- NEW PROJECTS FUNDED BY FTGA IN 2001**
- Comparative Pathogenicity of



- Several Plant-Parasitic Nematodes to Turfgrasses, William Crow, two-year study, \$9,200.
- Documenting the Florida Yard Concept for Reducing Nutrient Runoff and Leaching, John Cisar and George Snyder, one-year study, \$11,500.00
- Breeding Bermuda Grasses for Florida, Brian Scully, John Cisar, Laurie Trenholm, J. Bryan Unruh and Kenneth Quesenberry, one-year study, \$20,000
- Enhancement of Water Use Efficiency in Sand Soil in Golf Greens and Fairways, J. B. Sartain, Grady Miller & T. W. Shaddox, 3 year study - \$15,124 (1/2 funded by FTGA General Fund 1/2 funded by Envirotron Fund)

Total 2001 New Projects FTGA funding is \$41,010.50

### CONTINUING PROJECTS FUNDED BY THE FTGA

- Bahiagrass Improvement for Rough Turf Application, Ann Blount and Kenneth Quesenberry, second year \$9,775, 2002 3rd year, \$6,325
- Seashore Paspalum Management in Florida, Laurie Trenholm, second year \$2,875.00
- Influence of silicon on controlling grey leaf spot of St. Augustinegrass, Lawrence Datnoff, Russell Nagata, and George Snyder, second year \$950.00
- Fate of N During Grow-In of a Golf Course Fairway Under Different N Management Practices and Intensities, J. B. Sartain and Jason Kruse, second year \$15,640.00
- Second Year Study for 2001 The Role of Gypsum for Maintaining Turfgrass on Sand Soils, George Snyder and John L. Cisar, \$13,800.00

Continuing 2001 research funding from the FTGA is \$43,040.00

Overall total for turf research funding from the FTGA for 2001 is \$84,050.50

### CONTINUED FUNDING FROM FLORIDA SOD COOPERATIVE

- Optimizing herbicide combinations for managing mixed weed populations, Philip Busey, second year \$5,000

- Tropical Signalgrass Management in St. Augustinegrass Sod, Barry Brecke, J. Bryan Unruh, Philip Busey, R. Charudattan, Carol Stiles, Laurie Trenholm, Grady Miller and Jan Weinbrecht, second year \$10,000

Total continuing project funding from the Florida Sod Coop is \$15,000.00

### CONTINUED FUNDING FROM SEVEN RIVERS CHAPTER (ENVIROTRON FUND)

- Diagnosis and Control of *Pythium* diseases of turf in Florida, Carol Stiles, Lawrence Datnoff and Grady Miller, second year \$2,410.00, 2002 third year, \$1,150.00
- Enhancement of Water Use Efficiency in Sand Soils used in Golf Greens and Fairways, J. B. Sartain, Grady Miller & T. W. Shaddox, first year \$4,910.50, second year \$5,040, third year \$5,173.50 (50% of project total)
- The Effects of Light Intensity on Turfgrass", Laurie Trenholm, third year \$24,000

Total funding for 2001 from the Envirotron fund is - \$31,320.50

### GCSAA Seminar

Golf course superintendents got their education off to an early start by attending a GCSAA Superintendent Leadership seminar on Monday morning.



FGCSA President Geoff Coggan, left, poses with former GCSAA President Bruce Williams, who presented the half-day seminar on Mastering Your Communication Skills. The Leadership series is being sponsored by a \$250,000 grant from Callaway Golf. Photo by Joel Jackson.

### Ribbon Cutting

Newly elected FTGA Officers officially open the 49th Annual FTGA Conference and Show in Gainesville.



From left: Bobby Ellis, secretary/treasurer; Alan Puckett, president and Ray Caruthers, vice president. Photo by Paul Bundschu.

### GCSAA Educators



From left: FTGA's Don Benham meets with GCSAA's Chapter Seminar Manager Shari Koehler and Director of Education Hannes Combest and UF's Dr. Terril Nell to discuss how GCSAA might partner with the FTGA to provide more credit-earning educational opportunities for conference attendees. Photo by Joel Jackson.

### FGCSA Booth



FGCSA Association Manager Marie Roberts (seated) chats with Scott Zakany while Buddy Carmouche takes the Caddy Shack Trivia Test at the FGCSA Booth during the FTGA Trade Show. UF turf science major Jim Spratt had a perfect score to win the contest and the mini-golf bag cooler prize. Photo by Joel Jackson.



## USGA GREEN SECTION

## When It Rains It Pours: From Famine to Feast

By John Foy and Todd Lowe

Heavy rains and irrigation restrictions are still the primary issues with Florida golf course managers.

The weather, and especially rainfall for Florida, has been extreme for some time. Last year ended with a 20-25 inch rainfall deficit for most of the state. Throughout the winter and spring, severe drought conditions plagued the state, and because of a critical water shortage, the water management districts imposed irrigation restrictions. The Phase II restrictions, which allow irrigation of fairways and roughs two times per week, have complicated course management, but to my knowledge major turf loss has not been experienced.

In July, typical summertime thunderstorms began to occur. By the end of the month, total rainfall for Palm Beach County ended up being the second highest recorded in the past 50 years. This was followed in early August by a tropical wave that dumped as much as 13 inches in some locations and caused localized flooding. With all of the rain, wells and reservoirs have been replenished and the water level in Lake Okeechobee has risen more than two feet. However, the lake is still two feet below average for this time of year.

As expected, the excessive rains and heavily overcast skies have resulted in declining bermudagrass health and quality, especially on putting greens. With almost every one of the SOS calls we have received, a very low height of cut is being maintained due to demands for fast putting speeds. Remember: when sunlight intensity is reduced during the rainy season, raising the height of cut is a necessary compromise to assure bermudagrass survival.

Superintendents are starting to think about the upcoming winter season.

Overseeding is a primary component of fall preparations, but with the South Florida Water Management District announcement that irrigation restrictions will not be lifted, overseeding plans should be reconsidered. Establishment and maintenance of overseeding is not feasible if fairway and rough irrigation is permitted only two days per week.

There are no plans to lift the restrictions on nonessential water use, and imposing some type of permanent watering limits for the next two decades is being considered. This coincides with completing the Everglades Restoration Project and expanding the region's wells and reservoirs. If there is not a reversal in this situation, golfers in South Florida can be provided with good playing conditions, but a lot of courses will not be as green.

## TODD LOWE ALSO CHIPS IN FROM HIS TRAVELS

When it comes to water, Florida has been a state of extremes. We have gone from suffering severe drought to being inundated with rain since mid-June. Heavy rains soaked much of Florida during the week ending July 17, further easing long-term drought across the state. Only a small area of extreme drought lingers across interior central Florida. During the first 17 days of July, rainfall in Orlando included 9.28 inches (225 percent of normal).

The average surface elevation of Lake Okeechobee rose to 9.66 feet on July 17. This is up from 9.23 feet on July 10 and a record-low level of 8.97 feet on May 23. Lake Okeechobee is a key hydrological feature in the state of Florida as it supplies many of the surficial aquifers for our golf courses. It is still below the level that it needs to be and is being retrofitted with technology to backfill the reservoir.

Some experts are now calling for a mild El Niño throughout the region, so a more "normal" rainfall amount should continue through the summer. This is welcome news for many golf courses through-

out the state that have previously suffered from the drought. However, many courses have already received more than they can handle.

Increased rainfall can make it difficult to perform routine golf course maintenance practices. Fairway mowing is especially difficult on rain-soaked turf and some courses can fall behind. In addition to being overly wet, the turf becomes very thick and more difficult to mow and appears scalped when mowers are eventually allowed on the turf. A good tool throughout Florida during the rainy season is the use of plant growth regulators. PGRs like trinexapac-ethyl (Primo) reduce the vertical growth of turf, thereby decreasing mowing frequency. On bermudagrass fairways, PGRs also decrease clumps of clippings left behind from mowing.

Reduced rates of PGRs are also helpful for improving playing conditions on bermudagrass greens. Bermudagrass is actively growing now that nighttime temperatures are consistently within the 70s. PGRs increase the horizontal growth of bermudagrass, which improves surface smoothness and speed.

Remember, with periods of rains or persistent thunderstorms, sunlight is reduced. During the Florida rainy season slightly higher heights of cut need to be maintained to compensate for reduced sunlight. This is true with both Tifdwarf and ultradwarf bermudagrass putting surfaces.

Dealing with Mother Nature on a daily basis makes the life of a golf course superintendent very interesting. Although the elements cannot be controlled, there are a few tools available to help us cope with their effects.

*Adapted from the USGA Links On Line Florida Region Update.*

*John Foy, jfoy@usga.org, is director of the USGA Green Section Florida Region. Todd Lowe, tlowe@usga.org, is agronomist for the Florida Region. Both can be reached at 561-546-2620*



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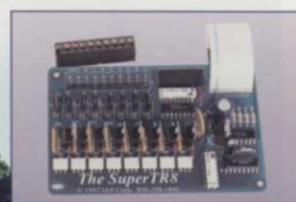
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# What A Success!

By Gary L. Slater

As I sit back and reflect on the past six months, those words best describe my thoughts concerning the eastern bluebird reintroduction program in Everglades National Park. Granted, during that period, I often muttered other, less wholesome, phrases. For example, those days when my field crew and I awoke before dawn to drive to our research site, only to be taunted by bluebirds that refused to be trapped or even be found. As time passes, however, the unpleasant memories fade, while the accomplishments become more evident.

Perhaps the biggest reason for this year's success was the participation by golf courses. Last December, George McBath and I began talking to golf course superintendents in Naples to see if courses would be interested in donating bluebirds to the reintroduction program (see Florida Green, Spring 2001). The response by golf courses was extremely positive and as the breeding season approached, five courses each agreed to donate a pair of bluebirds.

Without George's help, this project would not have been possible. George is an enthusiastic advocate for conservation on golf courses and has helped many courses become certified in the Audubon Cooperative Sanctuary Program. It's no wonder that he has become known in southwest Florida as "the bluebird man." During this project, he guided me to nest boxes where we could trap, and he monitored bluebird nest boxes after birds were removed. With his help, we moved 10 adult and five nestling bluebirds from golf courses to a new home in Everglades National Park.

We captured and translocated the first breeding pair of bluebirds from Royal Poinciana Golf Club on Feb. 20, and followed that with captures of pairs from Grey Oaks CC and Foxfire Golf and CC on March 5.

All the pairs were captured with a large (30' x 25' ft) net designed to catch birds, a live lure bluebird, and speakers to play the bluebird's song on either side of the net. The net was placed next to a nest box where breeding behavior by bluebirds had been observed, and the lure bird was placed on top of the nest box in a small cage.



Gary Slater tries to locate and track bluebirds in the Everglades National Park by radio signals from tiny transmitters attached to the birds. Photo by Liliana Menacho.