



The Florida Green

Winter • 1992-93

SPECIAL REPORT

HURRICANE ANDREW

THE RECOVERY OF
SOUTH FLORIDA'S
GOLF COURSES





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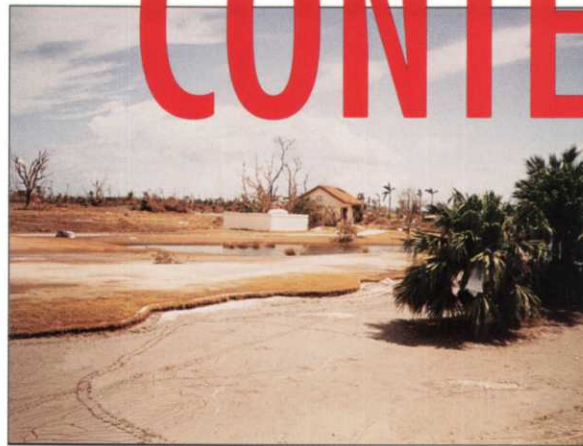
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1992-93

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TURFGRASS QUIZ

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Clue: Four-wheel drive
needed to pull mowers.

Answer: See Page 12



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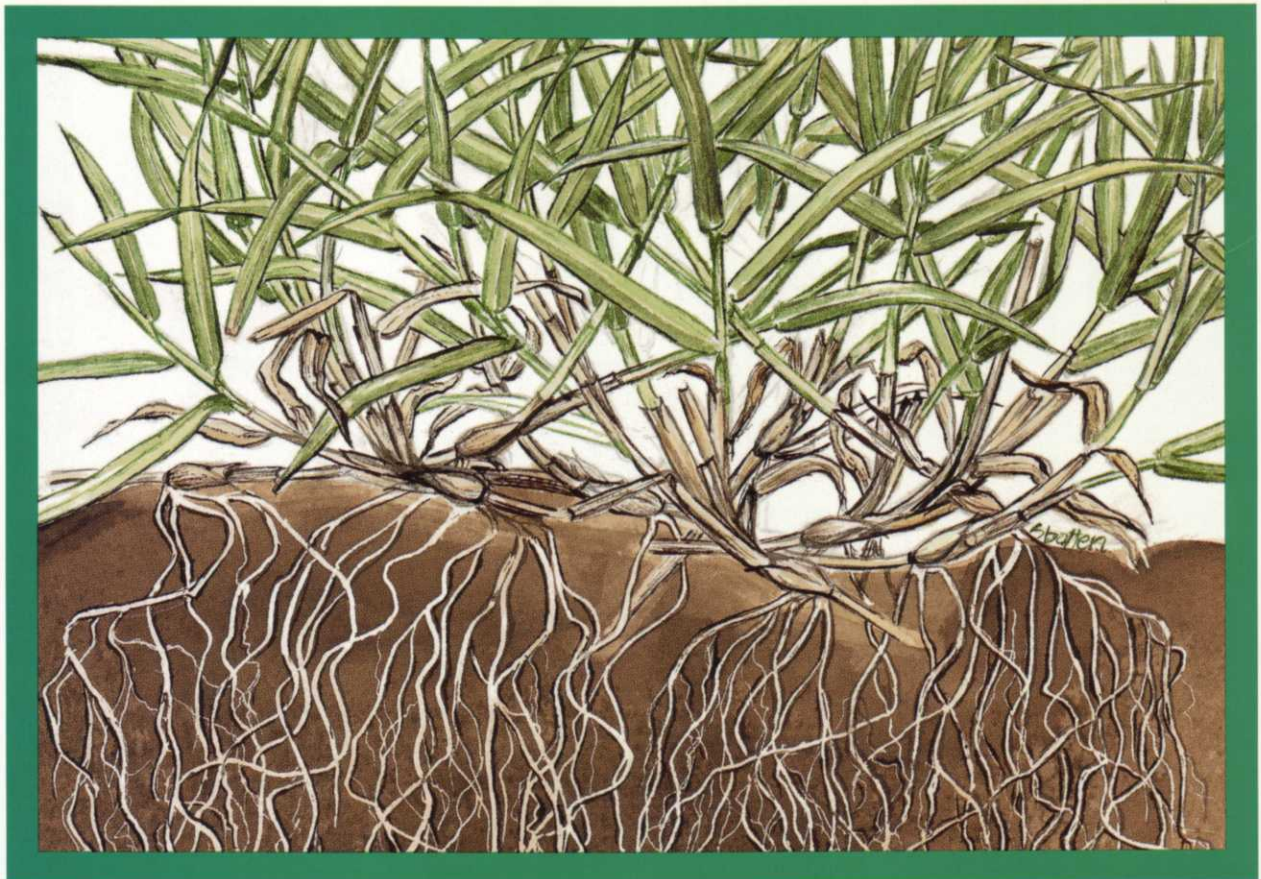
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Character, leadership, teamwork

When a crisis occurs



Mark Jarrell

Mark Jarrell, CGCS
President
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I'm not the first person to observe that crisis illuminates character.

Hurricane Andrew, the Big One we've been expecting for decades, violated the southern tip of the Sunshine State Aug. 24. As the authors of Victorian novels put it, he "had his way" with us. Rape is too mild a word for the physical, economic and emotional devastation this father of all storms ripped out of south Dade County.

Tornadoes destroy neighborhoods; Andrew took out half a county with one mighty punch below the citrus belt. Flattened it. Took away its innocence, its infrastructure and its image of invincibility in a few predawn hours that must have been sheer terror to those who lived through it.

But we've all seen the television pictures, talked with friends who were taken to the mat by Andrew and many of us took sight-seeing excursions to what used to be Kendall and Perrine and Homestead, often in the guise of pressing business.

Still, I wasn't all that excited when I learned that this issue of *The Florida Green* was going to focus on Hurricane Andrew. We know the damage was bad, but of more than 1,000 golf courses in Florida, fewer than 100 were disrupted by the storm and fewer than a dozen suffered really significant damage. My own golf course, about 70 miles north of the hurricane's eye, sustained nothing more than a messy layer of leaves and small branches — less than we often get in a fast-moving summer thunderstorm.

Then I began to read my fellow superintendents' stories of their recovery from the storm. More than one wrote about the "true grit" displayed by crew

members, many left homeless themselves, who worked bone-numbing hours to help homeowners remove debris and water from their homes before turning their attention to the golf course.

I wondered, with a touch of awe, at the loyalty of workers who would labor like mules for long hours to clear debris and restore golf courses to playable condition in just a few days. Loyalty like that is developed only through enlightened leadership.

Rodney McNeill, superintendent at Calusa CC, wrote how proud he was to be part of an organization that would raise relief funds, not for its own members, but for its members' employees. Yes, I'm proud of our Hurricane Andrew Relief Fund too — and of David Meda, assistant superintendent at Boca West CC, for getting the ball rolling.

But more than anything else, I am proudest of the leadership exhibited by those superintendents who faced Hurricane Andrew's full fury and dealt with its aftermath. It's not uncommon for one person to rise up and perform an act of heroism in a cataclysmic moment. It's an altogether different matter to instill a sense of loyalty and dedication in your work force so that, when a crisis occurs, it will instinctively and unselfishly meet the challenge and focus on the job at hand.

While it is important to know what needs to be done, the real test is getting people to do it in the face of adversity. I'd say the character of golf course superintendents came through Hurricane Andrew standing tall and shining brightly.

“Best overseeded grasses on the putting green were Sabre and Cypress cultivars of *Poa trivialis*”

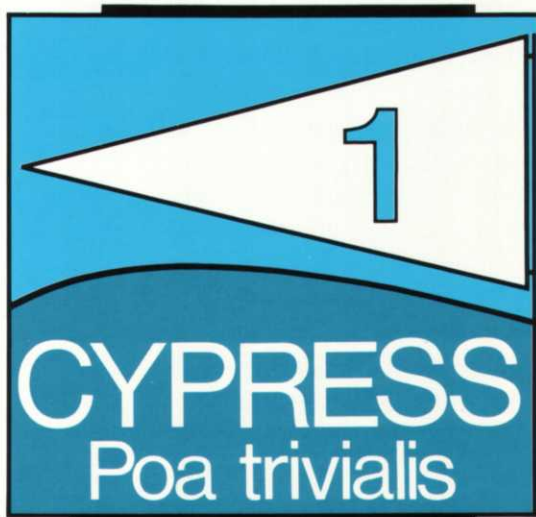
1992 University of Florida Dormant Bermudagrass Overseeding Trial - Gainesville, FL.

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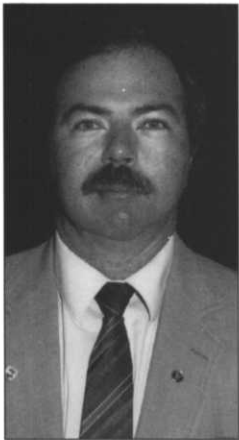
Table 2. Monthly and seasonal months for turf quality of winter overseeded grasses 'Tidward' bermudagrass putting green from December 1991 to April 1992 at Gainesville, FL.

Turfgrass	Dec.	Jan.	Feb.	Mar.	Apr.	Mean
Sabre	7.8	8.2	8.4	8.0	5.5	7.8
Cypress	7.2	7.4	7.8	8.0	6.0	7.4
Pinnacle	7.5	7.8	7.8	7.3	5.5	7.3
Premier	7.8	7.7	7.1	7.4	4.5	7.3
Mix #1	7.4	7.7	7.5	7.3	5.0	7.3
Mix #2	7.2	7.8	7.9	7.9	5.3	7.3
GH-89	7.1	7.3	7.0	6.9	5.5	7.3
Southern Select	7.5	7.4	7.1	7.0	5.8	7.3
Mix #1	7.2	7.2	7.6	7.3	6.1	7.3
Leader Board	7.3	7.3	7.4	7.0	6.8	7.3
Medalist	7.2	7.2	7.3	7.0	6.6	7.3
Repell II	7.2	7.2	7.4	7.0	6.1	7.3
Essence	7.5	7.5	7.4	7.0	6.8	7.3
Cowboy II	6.8	7.3	7.4	7.0	6.9	7.3
CBS II	7.3	7.3	7.4	7.0	6.9	7.3
Evening Shade	6.8	7.5	7.4	7.0	6.9	7.3
Pennant	7.3	7.3	7.4	7.0	6.9	7.3
Mulligan	6.8	7.3	7.4	7.0	6.9	7.3
Ph.D	7.0	7.0	7.4	7.0	6.7	7.3
Pebble Beach	7.0	7.0	7.4	7.0	6.7	7.3
Sunrise Primo	7.0	7.0	7.4	7.0	6.7	7.3
Prelude II	7.0	7.0	7.4	7.0	6.7	7.3
Alliance	7.0	7.0	7.4	7.0	6.7	7.3
Patriot II	7.0	7.0	7.4	7.0	6.7	7.3
Turf Seed Blend #1	7.0	7.0	7.4	7.0	6.7	7.3
Competitor	7.0	7.0	7.4	7.0	6.7	7.3
WX-1	7.0	7.0	7.4	7.0	6.7	7.3
WX-115	7.0	7.0	7.4	7.0	6.7	7.3
WX-P-83	7.0	7.0	7.4	7.0	6.7	7.3
Turf Seed Blend #2	7.0	7.0	7.4	7.0	6.7	7.3
Palmer II	7.0	7.0	7.4	7.0	6.7	7.3
Essence	7.0	7.0	7.4	7.0	6.7	7.3
Pennant	7.0	7.0	7.4	7.0	6.7	7.3
Blend	7.0	7.0	7.4	7.0	6.7	7.3

In the eye of the storm

**‘You too
have a
story
everyone
can
benefit
from’**

Editorial License



Tom Benefield, CGCS
Editor

Just when you thought it was safe to read *The Florida Green* again a shocking rumor was circulated, I have to admit it is true, they've asked me to be the editor.

Actually it's Joel Jackson's fault. If he had not asked me several years ago to be his assistant I would not find myself in this predicament.

Some say it is like letting the inmates run the prison, while more philosophical people say that even the best made plans of mice and men sometimes go astray. Well, I sometimes wander but hardly ever stray, except maybe in New Orleans while watching Florida play in the Sugar Bowl game. But no chance of that this year so I think we are safe for now.

I must admit however that I am honored to be asked to be editor and will work diligently to keep *The Florida Green* to the high standards it has become and which other industry publications are judged by. It will not be an easy task. To follow in the footsteps of Joel (and before him Dan Jones) will be a difficult mission. Two of the most ethical and dedicated men in the turf industry have steered this publication into the position of leadership it attains today. My hat is off to them, they have performed admirably and each of us in our association owe them a debt of gratitude.

This issue marks other changes in the magazine. With this special Hurricane Andrew issue we return to a quarterly publishing schedule. It also begins a positive restructured arrangement of duties and responsibilities with the publisher, Janlark Communications Inc. The old agreement was not fair to either them or us and the new one is beneficial to both parties. We are pleased to continue the relationship with Janlark and look forward to many fruitful years with Larry Kieffer and company.

However, the success of this publication relies more on you rather than me. For, you see, I am simply the steward, the figurehead and guiding hand who will mold the shape and focus of the issues. You, however, are the integral part of the wheel that will give the magazine back the flavor of superintendent-written articles. It is the responsibility of every member of the FCGSA to write an article for the magazine. Each of us have ideas and

stories to tell and we want you to tell yours.

It doesn't have to read like a Louis L'Amour paperback novel. All it has to do is make sense. We can make it read and flow in a proper editorial manner. But you have to do it first, just like the guy who puts his mole cricket mating-call tapes in an ice chest, floats it in the lake, and swears that the crickets are eaten by the fish when they land on the water, you too have a story everyone can benefit from.

You also have another direct role to play in the success of this magazine; you can support those who advertise in *The Florida Green*. These companies are putting their profits back into your magazine to help us educate and help fellow superintendents. The advertisers deserve your support in return for their commitment of supporting our association. So you see, it is just like I said before. You — not I — have the greater influence on how well our magazine will succeed. I promise you this: I will do my part. All I am asking is that you do yours.

This hurricane issue is a prime example of how your experiences have filled the pages for the good of all. I would like to thank all of those who returned hurricane surveys and wrote first-person accounts. While editing the articles for this issue I felt at times that I was right in the eye of the storm myself and thank God that I was physically 100 miles north of the destruction. It is truly a credit to the human spirit and strong moral fiber of Americans which allow for us to survive and rebuild when all that was left after the storm was sorrow and despair. The donations, the volunteers, the good will of the American people to come to the aid of others in times such as these demonstrates that we are the greatest nation in the world. The courage and dignity of American people were never so evident than in the stories which follow.

The real heroes of Hurricane Andrew are everywhere: neighbors, strangers, people of all walks of life pitching in and doing for others even when they had nothing left themselves. It makes one proud to be an American. Well, enough from me today. If I'm not careful I'll be singing the national anthem before I finish; I'm already humming it.

Before I go I must say a bit about the proposed GCSAA bylaws changes. I'm rather curious if there is anyone else out there who is as concerned with

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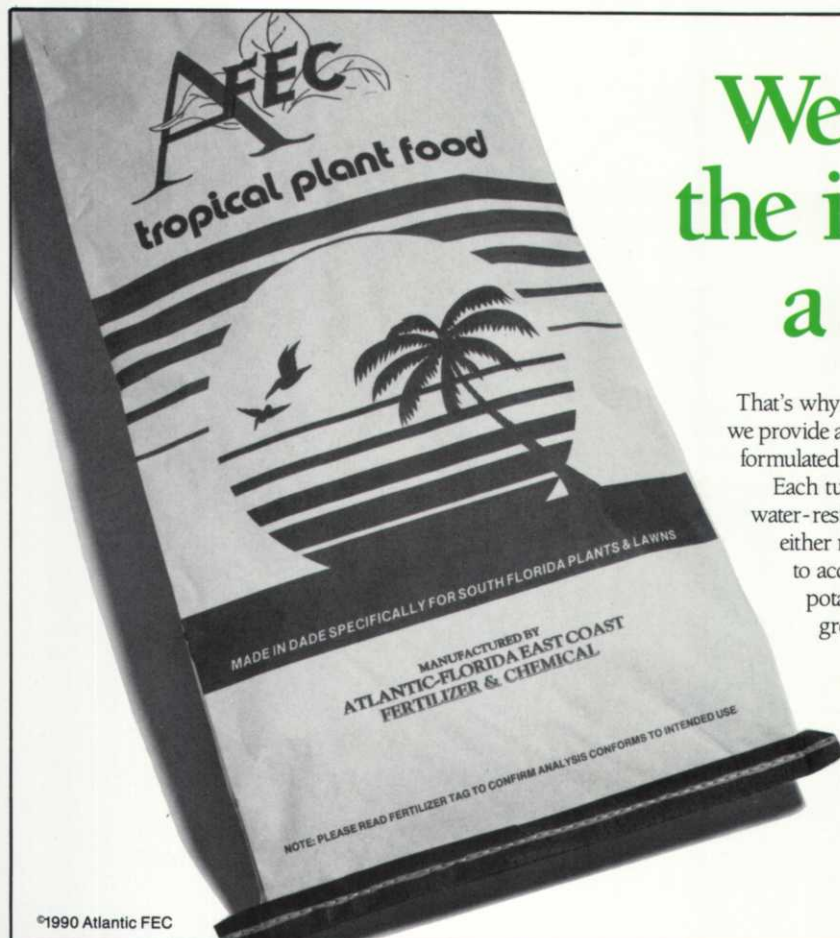
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Tom Benefield

continued

the slick, glossy media blitz coming out of Lawrence, Kan. To read the "unbiased" GCM one would get the impression that the whole universe supported these changes. I guess what is so unsettling is that everyone I speak to in other states has an opposite opinion of what the GCM relates. If GCM can't present both sides of the issues now, how do we know we can trust it to fairly present the future candidates in their magazine? If delegate voting is outlawed, how can we trust GCM's editors to not pick their choice for directors and slant the information on those candidates to sway the election? The past few months have raised a lot of questions not only about the bylaws but also the "slick Willie" campaign to push them through. So until next time, take care and keep thinking those good thoughts.



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FGCSA board opposing some proposed GCSAA Bylaws changes

Minutes of a special meeting of the FGCSA Board of Directors regarding GCSAA bylaws changes

A meeting of the FGCSA Board of Directors took place on Wednesday, Dec. 2, 1992, at Palm Beach National GC. The purpose of the meeting was to discuss the proposed GCSAA bylaws amendments and establish a position statement to be published in the next issues of *The Green Sheet* and *Florida Green*.

All officers were present. Also attending were external vice presidents Dale Kuehner, Prentice Knott, Alan Puckett and John Gallagher. Kevin Downing, who served on the GCSAA Standards Committee, and Gary Grigg, GCSAA board member, were also present.

President Mark Jarrell began the meeting by stating that the FGCSA wants to be open-minded about our views on the proposed amendments. Much time has been spent studying them at board meetings, informal discussions, and at the local chapter level. By coming up with a published position statement, the FGCSA is letting our position be known so that any FGCSA member who is planning to vote with the FGCSA bloc and disagrees with any of our views, will still have time to remove their name from the bloc at Anaheim during check-in.

It is no secret that the FGCSA is opposed to many of the proposed changes and we do not feel that we are the only chapter opposed to the amendments as they are written. We feel that compromises could be made to make them more acceptable and, where prudent, will offer suggestions and changes to improve the current procedures. Our position statement is not to be misconstrued as a vote of "no confidence" to the current GCSAA board. Rather, we feel it is our inherent

right as dues-paying members of this association to disagree with any proposed change to the GCSAA Bylaws that we feel are not in our best interest.

After some discussion, the following was established for each of the ballot proposals. In the interest of space, we have condensed the reasoning behind the decisions.

Ballot A: Name Change.

Position: Yes

Ballot B: Majority Vote.

Position: No

Reason: We feel that if the proposed amendment is a good amendment then it should not have trouble getting a two-thirds of the voters to agree that it should pass. If it can not get this type of support, then maybe it is not a good amendment.

Ballot C: Elimination of Voting Delegate

Position: No

Reason: While we feel there are some problems with the current method of voting at the Annual Meeting, we do not feel that a member's right to vote through either a delegate or a proxy should be eliminated. Rather we propose that it be amended to allow for voice vote or have all vote results published, listing each chapter's vote.

Ballot D: Legal changes

Position: Yes

Ballot E: Qualifications for memberships

Position: No

Reason: Qualifications for Class A memberships should be set and approved by member vote.

Ballot F: Additional Classifications

Position: Yes

Ballot G: Dues increase without membership approval.

Position: No

Reason: We feel this proposed amendment could merit our approval if it were re-written to include a ceiling for the amount the increase could be in any one year, and perhaps a time lapse period between increases. As far as anyone could remember, the GCSAA has always received approval by the membership when a dues increase was needed.

Ballot H: Voting Procedure

Position: No

Reason: As stated above, we are in favor of delegate voting. However, we do agree with the proposal to vote for secretary/treasurer rather than having an appointed position. We also agree with having the option of running the president-elect unopposed.

Ballot I: Majority Voting

Position: No

Reason: See Ballot B above.

The FGCSA board voiced their concerns with the field staffing program. Even though the majority of the board is in favor of field staffing, it was felt that this should be phased in very slowly.

This person should do more than recruit new members. Concern was raised over the type of person that would be hired for these positions.

Would we be creating our own outside consultants? The board is aware that if Ballot G is not approved, there will be a vote at the annual meeting to increase dues to cover expenses of field staffing.

We, the FGCSA, feel that the best course of action on many of these proposed amendments would be to restructure them into member-oriented posi



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tive changes which would merit further consideration and put to rest those proposed changes which offer little value to the membership.

In that line of thinking, we have offered brief descriptions of what some of the changes might be changed for the betterment of the association. To conserve space, we deliberately made them brief and are available for further discussion on the options we feel are open to us.

TURFGRASS QUIZ

Answer: Paul Frank, Hole-In-The-Wall Country Club, had just weathered the 1962 hurricane. Fairways had plenty of water. A jeep was used to check the damage.

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A former FGCSA president discusses the proposed GCSAA bylaws changes

The letter below was received from past president Cecil Johnston. His thoughts and concerns on the proposed bylaw changes are of such great interest to our association that it was deemed appropriate to publish them in this issue. We appreciate Cecil's candid statements and encourage other members to write letters to the editor on topics they would like to share their viewpoints on.

Dear Tom:

I received the bylaw change information today and I'm wondering what you are thinking.

I guess what bothers me the most is the way our (GCSAA) media has given such a one-sided viewpoint. Before the vote has even been taken, brochures have been sent out about the changes that only express the need for change with no dissenting opinions. I saw a lot of smiling faces saying how necessary and important the changes are and that was it.

Surely there is some wisdom in the bylaws we have successfully lived with all of these years.

When it comes time for the mail-in votes next year, will all of the individuals voting get the same one-sided snow job? Is it really better for mail-in voters to choose candidates they have never even met? I wonder if this type of voting might lead to a lot of "yes" men as directors with no consideration as to how these individuals may interact with others on the board.

I know as a past voting delegate that even after meeting the candidates, hearing them speak, and watching them interact with others, it was still very difficult to decide who would be best for our organization. Will these people give a fair analysis of character and abilities of each candidate so the mail-in voters can make a wise decision or will they, in fact, control the elections even more than at present?

Ballot C. What is so bad about trusting your vote to someone who knows the people and understands the politics better than you do? If businesses and governments elected their leaders without proxy and delegate votes, many would be in much worse condition.

Ballot D. I don't like saying that a "Golf Course Superintendent" is responsible for the environmentally sound management of a golf course. I wouldn't want to be sued by someone who tries to use this document to prove my responsibility. I think even greater responsibility lies with the owners of these properties and then maybe general managers. I wouldn't want an owner someday saying that the superintendent accepted responsibility for the environment and was negligent.

Example: "After all, the superintendent said he was a GCSAA member. The GCSAA Bylaws state that the superintendent is responsible for the environmentally sound management of the golf course. I even paid his dues to be a member."

Maybe we are going a little overboard here. Is mentioning environmental responsibility really necessary?

This is a minute point but are 30 members constituting a quorum at a special meeting really a fair representation of an association of more than 11,000 members?

Ballot F (Section 3). What is wrong with members voting on what membership classes they want in their organization? If the board wants to make other membership classifications, why don't they just come out and tell us? Can't they call a meeting or wait until the annual meeting? If they say they have a plan to expand our membership base, why doesn't someone tell our members what the plan is or are they worried that most members (a two-third majority) might not really want everyone remotely in-

olved with our industry as members?

It already bothers me somewhat when I see an affiliate or associate member advertise that they are a member of the GCSAA. People on this side of the planet still think it is important when someone says they are a member of the GCSAA and I hate to see this privilege abused.

Ballot G. Let me get this straight. The board wants to set all different types of (discount?) dues rates for all different types of memberships so more people are involved. Then the GCSAA will need a larger staff to help all of these people.

Next, they want to increase our dues \$40-50 per year to pay for increased services. Some of this new staff will be assigned to visit courses where the superintendents are not members and try to encourage the superintendent and owners of courses that they should become members of the GCSAA (I hope they don't start going door-to-door on Sundays!). Maybe they can also start a consulting service like the USGA Greens Section soon after that!

Ballot H. You already know my concerns about individual voting.

Article IV, Elections. Brings a few more questions to mind. It is going to take seven to 20 days for me to receive a letter. If that letter must be returned to the association within 15 days, I guess I had better vote at the annual meeting. Does a ballot being postmarked by a certain day qualify the same as being returned to the Association by a certain day?

When you establish a 15-day window for members to mail in their votes, and no longer permit proxy or delegate voting, I wonder how many people will actually be making the decision of who will lead our Association.

One factor to consider is that 60-45 days before the annual meeting, some

What is wrong with members voting on what membership classes they want in their organization?

members may consider budget planning and holiday affairs more important. I am also a little skeptical about the future efficiency of the mail system preceding the holidays. Time will tell.

I assume that all mail-in votes will be kept in confidence until after the vote at the annual meeting. Now that there may or may not be an Election Committee, I suppose it is possible that members of the Board or others could hear some of the preliminary results. I prefer that the existence of an impartial Election Committee be specified in the bylaws.

Sincerely,
Cecil Johnston, CGCS
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About the Hurricane Andrew Research Project...

A total of 42 superintendents responded to the FGCSA hurricane research survey, three with photos.

The surveys revealed a wealth of information and each questionnaire contributed something to this issue — even the ones which reported no damage.

When the questionnaires were written, we had hoped to tabulate some comparative data on damage totals, operating days lost, trees lost, etc., but we discovered that the questions had not been worded precisely enough to yield comparable answers. Each superintendent interpreted the damage estimates differently; superintendents who were able to get part of their courses back in operation quickly while taking their time with the remaining holes were unsure how to estimate the number of revenue days lost; private courses do not happily reveal financial data. And so on.

The inadequacy of our questions became more apparent as each survey came back.

Furthermore, superintendents at some severely damaged courses could not find the time to fill out the questionnaires. Therefore, any chart or table based on the surveys returned would be incomplete and misleading. So no comprehensive damage report is possible.

But the survey responses did enable us to present the “big picture” quite accurately. We are extremely grateful to Scott Wahlin and Ed Ramey for their eyewitness accounts and to the



Gouge at Deering Bay CC #4 green.

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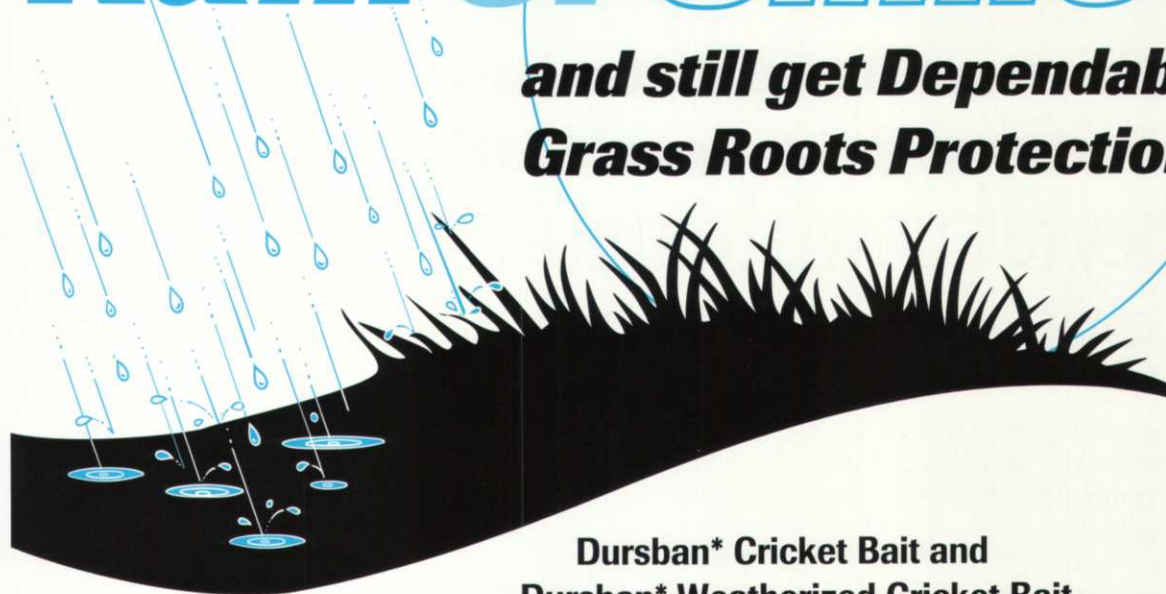
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Florida Green Hurricane Andrew Research Project

continued

following superintendents for responding to the survey:

Surveys with photos: Bob Allen, Hibiscus GC; Robert G. Klitz, Inverrary CC; John Snyder, Kendale Lakes G&CC.

Surveys: Tad Altman, Marriott's GC at Marco; Mark Atwood, Bears Paw CC; Robert Bittner, Club at Pelican Bay; Allen R. Bunn, Orangebrook; Jim Campoli, Woodland CC; Buddy Carmouche, Hole-in-the-Wall GC; Tom Chandler, Island CC; David Court, Boca Lago CC; John Cowndon, Sombrero CC; David Demmery, CGCS, Quail Ridge CC; Cliff Downing, Jacaranda GC; Scott Foster, Villa Del Ray GC; Dan Garson, Coral Ridge CC; Mark Hampton, CGCS, Royal Poinciana GC; Rick Hill, Kendall GC; Glen Klauk, Delray Dunes G&CC; Jeff A. Klontz, CC of Florida; Dale Kuehner, Colony West CC; William J. Lanthier, North Palm Beach CC; Dick McCoy, Wyndemere CC; Bill McKee, Oak Tree CC; Carlos McKeon, Palmetto GC; John Mike, Palm Beach Lakes GC; David Moyer, Broken Sound GC; Dick Naccarato, Naples Beach Hotel; Jeff Newman, Boca Woods CC; Joe Panteleo, Fort Lauderdale CC; Steve Pearson, The Falls CC; Peter Powell, Boca Greens CC; George Ralish, Polo Trace G&TC; John Sherban, Greenview Cove GC; Bryan Singleton, Riviera CC; Wayne Spano, Key Colony Beach Par 3 GC; Bill Sutton, Sunset GC; Jeffrey C. Taylor, Indian Creek CC; James R. Walker, Briar Bay GC; Dale Walters, Royal Palm CC; C. Stanley Weaver, Cypress Creek CC; Terry Wood, Royal Wood G&CC.



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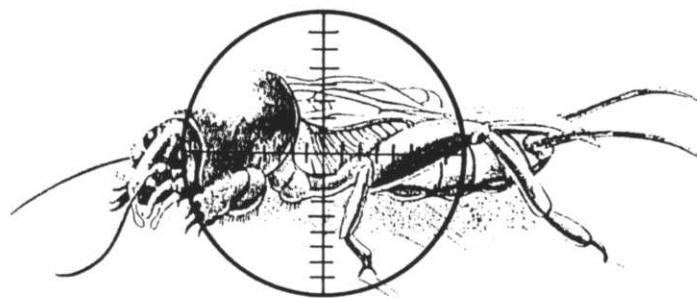
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A virtually undamaged boat was deposited in the palms to the right of #13 fairway, Deering Bay CC.
See Page 36 for story on Deering Bay.

South Florida golf courses endure, recover

Storm over land

BY LARRY KIEFFER

Nothing can withstand the forces of nature. No matter how well built the structure, how deeply rooted the tree or firmly padded the pumping station, somewhere there's a hurricane, tornado, earthquake or flood that can take it out in a flash.

Man at his finest is no physical match for the raw power of nature.

By the same token, no force of nature can dominate the human spirit. No matter how devastating the physical blow, man's incredible will to survive will make him crawl out from the debris, pick himself up and dust himself off.

And start all over again.

By an exponential factor, Hurricane Andrew was the greatest natural disaster in this nation's history. Early damage estimates of \$10 billion have since proven to be far too low. The final cost will never be calculated.

Impact of the storm on Florida's golf industry is difficult to

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With the 5100-D, Toro introduces Automated Control Electronics, ACE™. A revolutionary control system for specialized turf equipment, yet a proven technology, ACE provides additional

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At the heart of ACE, is a solid state electronic control system. This enhanced system employs improved switches along with a simplified wire harness for added reliability. With electrically actuated hydraulic spools, there are no external moving spools, minimizing the potential for leaks. And operator benefits include simpler controls — a single joystick enables straight line tracking — no pedals or switches — for reduced fatigue and a more consistent quality of cut.

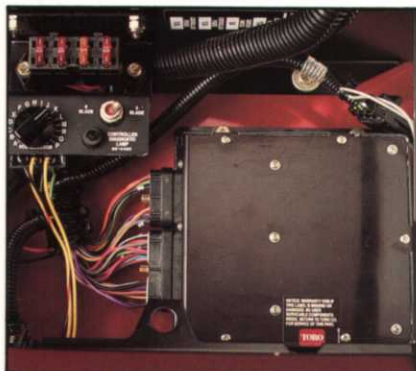
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With ACE, Toro also brings about Automatic Clip Control, ClipACE™. Reel speed is automatically adjusted according to

mowing speed for an ideal relationship that optimizes cutting efficiencies as it accommodates varied turf conditions.

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- 2) Input your desired height of cut using the letter coded dial.



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TO SELECT THE CORRECT CLIP RATE:

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3. LOOK ACROSS THE CHART TO FIND THE LETTER CORRESPONDING TO THAT HEIGHT OF CUT.
4. TURN THE HOC SELECTOR KNOB TO THE LETTER SETTING DETERMINED IN STEP 2.

CLIP RATE (REEL SPEED) SELECTION CHART			
HOC KNOB POSITION	8 BLADE HEIGHT OF CUT	HOC KNOB POSITION	5 BLADE HEIGHT OF CUT
A	FULL SPEED	A	FULL SPEED
B	26 in. 6.6 mm	B	26 in. 127 mm
C	30 in. 7.6	C	30 in. 143
D	35 in. 8.9	D	35 in. 152
E	40 in. 10.2	E	40 in. 163
F	45 in. 11.4	F	45 in. 173
G	50 in. 12.7	G	50 in. 181
H	55 in. 14.0	H	55 in. 203
I	60 in. 15.2	I	60 in. 214
J	65 in. 16.5	J	65 in. 228
K	70 in. 17.8	K	70 in. 244
L	75 in. 19.0	L	75 in. 24.4
M	80 in. 20.3	M	80 in. 25.4
N	85 in. 21.6	N	85 in. 26.5
O	90 in. 22.9	O	90 in. 27.5
P	95 in. 24.1	P	95 in. 28.5

FULL SPEED - CUTTING UNITS ALWAYS SET TO FULL SPEED IN THIS POSITION.

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IF THE REEL CONTROL LIGHT ILLUMINATES, IT MEANS ONE OF THE FOLLOWING THINGS:

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2. THE MACHINE IS BEING OPERATED AT A TRACTION SPEED TOO FAST TO ALLOW DESIRED CLIP.
3. TO CORRECT THE SITUATION, CHANGE THE TRACTION SPEED WITH THE LIGHT GOES OUT.

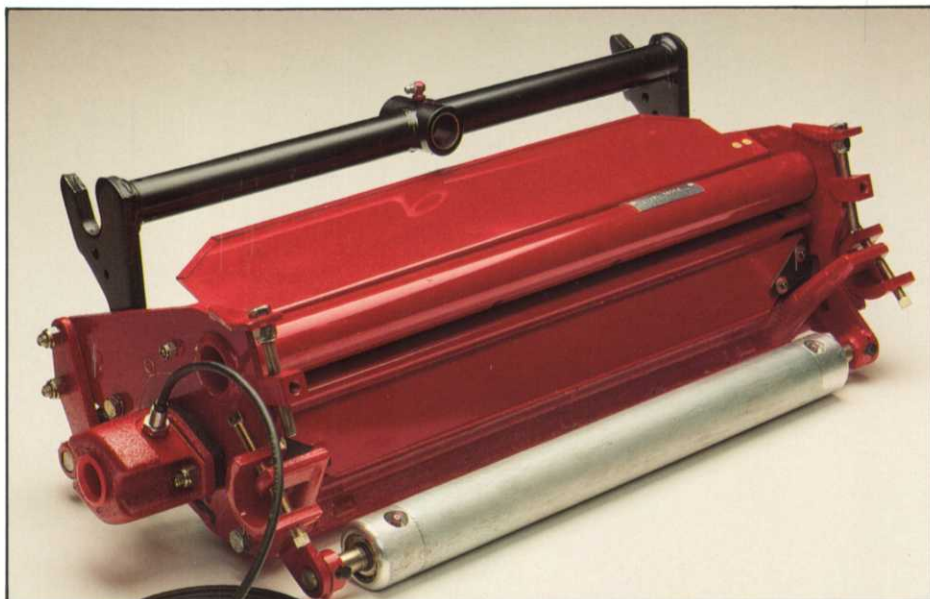
Conveniently located directly under the seat is a range chart referencing the HOC relationship.

This simple task will adjust the reel speed automatically whether

you speed up or slow down providing a more consistent quality of cut and optimum playing surface.

If the mowing speed reaches a range where it's impossible for the reels to accommodate, a red indicator light on the control panel will alert the operator of the need to either slow down or speed up.

ClipACE monitors reel speed every 80 milliseconds. Key to its sensing capability are Hall Effect switches, which have no moving parts, and offer unparalleled reliability. The reel speed sensor allows the electronic control unit (ECU) to compute the correct reel speed as the mowing speed changes.



No Other Mower Knows Your Fairways Better

ClipACE offers a unique feature that will surely improve your cutting efficiency, but the Reelmaster 5100-D provides much more for increased productivity and to ensure a consistent quality of cut.

To keep the reels down for better ground contour following, better penetration and thatch control, Toro gives you a geometrically equal cutting unit suspension design. And, a spring loaded, **Positive Down Pressure System**, adjustable at 4 positions in 8 lb. increments, helps to maintain the reels in position over varying contours. This enables you to productively mow at a faster rate, beyond traditional mowing speeds, and maintain a consistent height of cut.

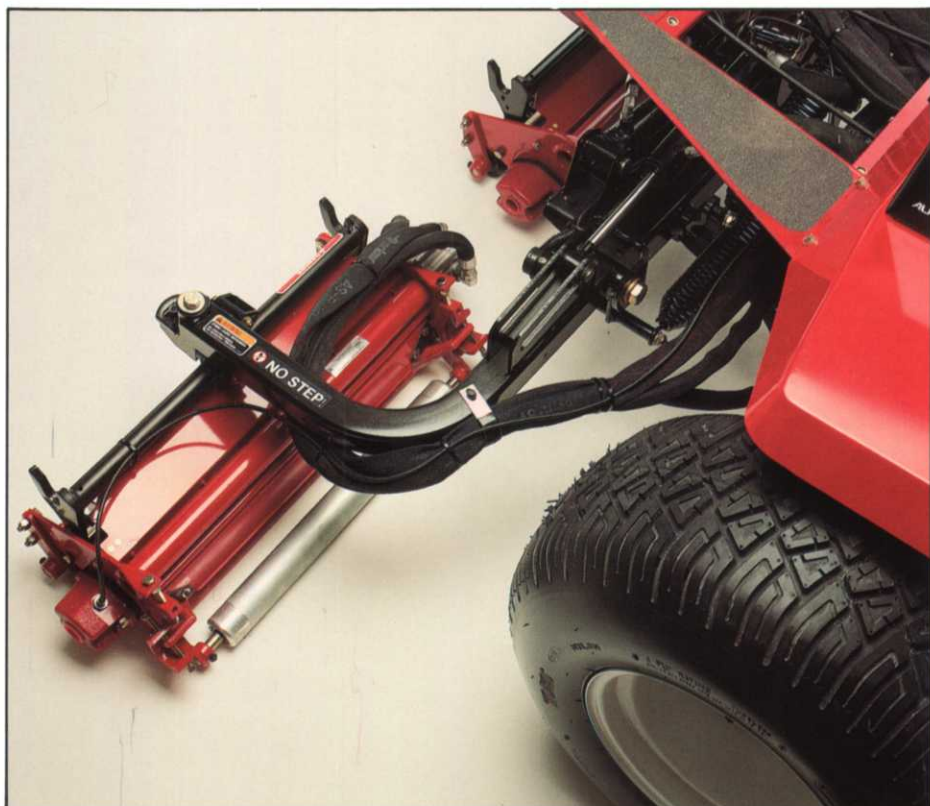
When you combine the ground hugging ability of Toro's cutting units with the better maneuverability of this machine, you can cross-cut fairways in different directions easier than ever. This ensures upright growth, and provides better playability for your golfers.

Trailing cutting units are free to float in all directions to ensure ground following over undulations and to minimize scalping. In the event of impact, each cutting unit incorporates a breakaway device to help lessen damage.



Positive Down Pressure System

Large diameter, narrow width tires provide a properly oriented footprint to minimize scuffing and attain the desired contact area to reduce ground pressure.





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Score with ACE™!

Here again, ACE offers a new dimension of productivity, simply improving your control over product reliability and serviceability.

ACE includes a hand-held diagnostic tool that assists the mechanic in pinpointing problems. Rather than spend non-productive time searching for the problem, this tool allows the mechanic to easily troubleshoot the electrical system, and helps determine whether the problem is hydraulic or electrical. Enjoy the added productivity this tool brings to your maintenance shop. It's like adding another expert mechanic to your staff. Superintendents will benefit from more uptime meeting the increasing demands of play.

Data Log™ System



To ease frustrations associated with intermittent problems, the ACE system also features Toro's exclusive Data Log System. It's another diagnostic tool that captures and records machine data, and is available to install on units experiencing intermittent problems. The distributor's service representa-

tive no longer needs to be on-site to witness the problem. You record it for him to analyze in the shop. Data Log facilitates solving problems from long distances. Once the cause is known, the problem can be fixed — usually in one trip, or on the phone!

Servicing So Easy, Equipment So Reliable

The 5100-D aims to keep you on the course, not in the shop, with high-tech reliability built-in for trouble-free operations. One self-contained hydraulic manifold serves

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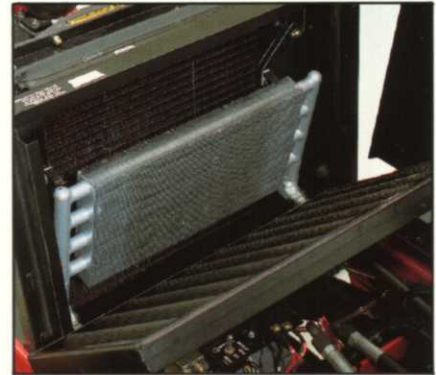
A 23 hp, liquid-cooled diesel engine powers the heavy duty hydrostatic transmission designed for quiet, efficient operations. This

complete drive system delivers full engine horsepower whether in 2- or 4-wheel drive operation for exceptional traction.

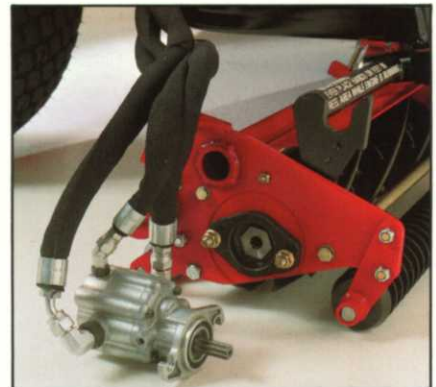


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The midmount radiator with easy-to-remove debris screen and tilt-out hydraulic oil cooler is easy to service and proven reliable.



All cutting units are interchangeable, too. Just loosen two fasteners, and the hydraulic motors are quick to release.

Consider the convenience of on-unit backlapping — front 3 at once, rear 2 together — designed to maintain a constant reel speed and eliminate reel stalling.

As with all Toro products, the 5100-D will be backed by Toro's Direct Today 48-Hour Delivery Program, in which any part not immediately available from Toro distributors can be delivered within 48 hours, anywhere in the contiguous United States. No minimum. No maximum. No extra charge.

Clean, Consistent Cutting Action

Toro's reels are designed to be more responsive to the specifics of fairway cutting to provide a superior quality of cut.

Heavy duty bedknives, reel blades and rollers withstand the more rugged terrain.

5 or 8 Bladed Floating Cutting Units match your desired height of cut range and mowing speed. The 8 blade reel is recommended for heights of cut below $\frac{5}{8}$ " and, the 5 blade reel for heights of cut above $\frac{5}{8}$ ".

Adjustable grass dispersion shields afford you the flexibility of rear dispersion, or front throw.

The **Rear Roller Height of Cut Adjustment** is engineered to maintain the proper bedknife position for optimum cutting efficiency at $\frac{1}{4}$ " to $\frac{3}{4}$ " heights of cut.



Toro 4-Matic®

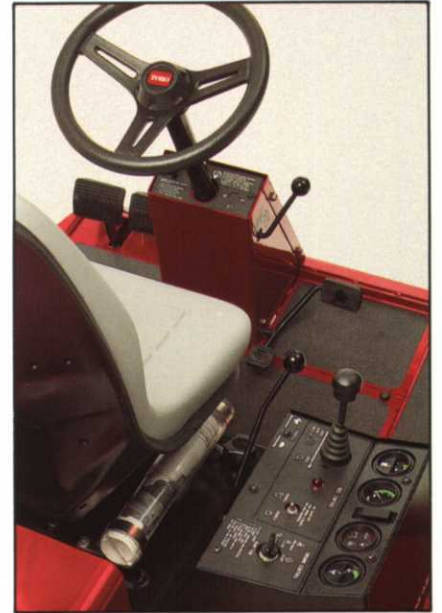
For enhanced traction, the 5100-D offers the exclusive Toro 4-Matic. An automatic on-demand 4 wheel drive system. Power is always available at both front and rear axles, eliminating the need to stop and shift. Its mechanical axle provides smooth power transfer for consistent power under wet or adverse conditions. ROPS and a seat belt are standard.

Full power, quad-link steering and clearly visible out front cutting reels allow for fast and accurate maneuvering in all fairway applications.



Effortless and Precise Control

The Reelmaster® 5100-D is quiet and easy to operate. A deluxe suspension seat, at-a-glance instrumentation and easy-to-reach fingertip controls provide for an operator-friendly environment. Even the reels are actuated or disengaged through one joystick. An uncluttered floor board promotes the convenience of single pedal hydrostatic drive with a mechanical speed control device to help maintain constant ground speed easily. And, Toro gives you independent steering brakes for incredible control and to minimize skidding.



Customize Your Reelmaster[®] 5100-D

Thatching Reels

Standard configuration includes 3/4" spacing, a Wiehle front roller with scraper and a solid rear roller with scraper. Other features:

- Interchange cutting units quickly — 1 bolt makes it easy and convenient.
- Control depth from 1 1/8" above turf to soil level; useful for breaking up cores or verti-cutting.
- Thatcher blades are reversible for extended wear.
- 2 1/2" large rollers are standard.
- Optional spacing combinations are available: 1/2", 1" or 1 1/4".
- Front and rear throw options



Front Roller Scrapers

Prevent clipping build-up that occurs when mowing wet turf.

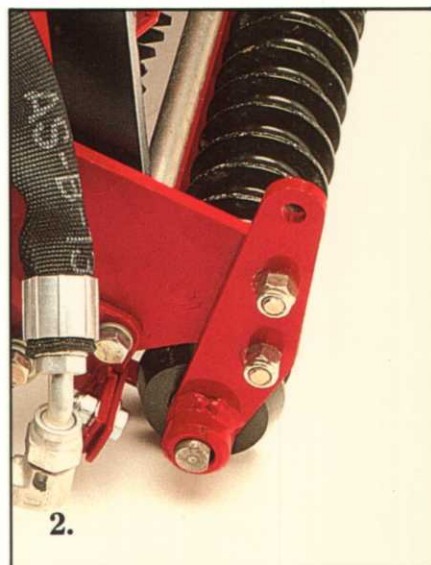
Height of Cut Extension

Allows you greater flexibility to maintain a wider variety of turf; extend your mowing height up to 1 3/8".

- Standard front and rear roller brackets maintain proper bedknife position.

Turf Compensation Kit

This kit includes 10 torsion springs (2 per cutting unit) that redistributes weight to help overcome unique turf conditions. It may also allow machine performance to extend into higher mowing speeds if that is a requirement.



Comb

Designed to assist in preventing excessive horizontal turf growth. Regular use may help control grain and excessive thatch conditions.

- Rigidly mounts to carrier frame behind front roller.
- Vertical adjustment to control aggressiveness.
- Abrasion resistant nylon for long life.

Grass Basket Kit

Easy to handle, high capacity baskets are mounted to the carrier frame, not the cutting units, ensuring cutting unit stability.

Roll Over Protective Structure

ROPS is optional for 2-wheel drive and standard on 4-wheel drive traction units.

1. Thatching Reels
2. Height of Cut Extension
3. Comb
4. Grass Basket Kit

Reelmaster® 5100-D Specifications*

MODEL 03502, 2-WHEEL OR 4-WHEEL DRIVE TRACTION UNITS											
ENGINE	Mitsubishi, 3 cylinder, 4-cycle liquid cooled diesel engine. 23 hp (17 kW) @ governed maximum rpm of 3200. 58.1 cu. in. (952 cc) displacement. Heavy duty, 3-phase, remote mounted air cleaner. Electric fuel pump. 12 volt, mounted on frame with replaceable fuel filter. High water temperature shutdown switch. Fuel filter/water separator.										
RADIATOR	Mid-mounted radiator with industrial tube and fin construction; 7 fins per inch. Approx. 6 quart (5.7 liter) capacity. Remote mounted 1 quart (.95 liter) expansion tank.										
ELECTRICAL FEATURES	12 volt, cold cranking 530 amperes at 0°F (-18°C), 85 minute reserve capacity at 80°F (27°C), maintenance free battery. 35 amp alternator with I.C. regulator/rectifier. Automotive type electrical system. Seat switch, reel and traction interlock switches.										
FUEL CAPACITY	10 gallons (37.9 liters) diesel fuel.										
CONTROLS	Foot operated traction and brake pedals. Hand operated throttle, speed control lever, parking brake lock, ignition switch with automatic preheat cycle, single joystick control for cutting unit on/off and lift/lower. Cutting unit backlap switch located under operator's seat. Reel speed input located under control panel.										
GAUGES	Hour meter, speedometer, fuel gauge, temp. gauge, 4 bank warning lamp: oil pressure, water temperature, amps, and glow plug.										
DIAGNOSTICS	The Automated Control Electronics, ACE™ system allows precision timing and control of machine functions for maximum reliability. Standard diagnostic display connects to an electronic control unit to pinpoint any electrical problems quickly and easily. Available DATA LOG™ System allows mechanic to find intermittent problems.										
TRACTION DRIVE	Hydrostatic transmission mounted on drive axle. Foot pedal control of forward/reverse ground speed. 10 micron filter mounted directly on transmission housing. Axle is used as reservoir for hydrostatic transmission, 200 mesh inlet strainer. Toro 4-Matic® 4-wheel drive system only: couples rear drive axle to hydrostatic transmission via drive shaft and over-running clutch for full time on-demand 4 wheel drive. A Roll Over Protective Structure (ROPS) and seat belt are standard.										
GROUND SPEED	0-10 mph (0-16.1 km/hr) forward, 0-4 mph (0-6.4 km/hr) reverse.										
TIRES/WHEELS/PRESSURE	Two rear steering tires: 19 x 8.50-8, tubeless, 4-ply rating. Two front traction drive tires: 26 x 12.00-12, tubeless, 4-ply rating. Recommended tire pressure: 10-15 psi (69-103 kPa).										
MAIN FRAME	All welded formed steel frame, includes three tie-down loops.										
BRAKES	Individual 7" x 1.75" (17.8 x 4.4 cm) drum type wheel brakes and parking brakes on front traction wheels. Hydrostatic braking through traction drive.										
STEERING	Power steering with dedicated power source.										
CUTTING UNIT SUSPENSION	Equal length lift arms with free floating, trailing cutting unit attachments with break away protection. Adjustable spring applied down pressure system.										
SEAT	Deluxe high back suspension seat.										
OVERALL DIMENSIONS	<table border="1"> <thead> <tr> <th>Height</th> <th>Length (w/o baskets)</th> <th>Length (w/baskets)</th> <th>Overall Width—transport</th> <th>Overall Width—operation</th> </tr> </thead> <tbody> <tr> <td>56" (142 cm)</td> <td>103.5" (263 cm)</td> <td>116" (295 cm)</td> <td>87" (221 cm)</td> <td>105" (266 cm)</td> </tr> </tbody> </table>	Height	Length (w/o baskets)	Length (w/baskets)	Overall Width—transport	Overall Width—operation	56" (142 cm)	103.5" (263 cm)	116" (295 cm)	87" (221 cm)	105" (266 cm)
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56" (142 cm)	103.5" (263 cm)	116" (295 cm)	87" (221 cm)	105" (266 cm)							
WEIGHT (approx.)	2-Wheel Drive: 2,200 lbs. (998 kg) with 8 blade cutting units, baskets and full fluid levels. 4-Wheel Drive: 2,550 lbs. (1,157 kg) with 8 blade cutting units, baskets and full fluid levels.										
WARRANTY	One year limited warranty. Refer to the appropriate Operator's Manual for further details.										
SOUND LEVEL	86 dB(A) under normal operating conditions.										
CERTIFICATION	Certified to meet the B71.4-1984 specifications of the American National Standards Institute's safety standards for riding mowers when 65 lbs. (29.4 kg) of ballast is added to rear wheels and a Rear Weight Kit is installed.										

5 AND 8 BLADE CUTTING UNITS, MODELS 03505 AND 03508

TYPE	Five 21" (53 cm) reels supported by equal length independent lift arms.
WIDTH OF CUT	95" (241 cm)
HOC RANGE	1/4" - 3/4" (6.3 - 19 mm); 5 Blade: 1/2" - 3/4" (12.7 - 19 mm), 8 Blade: 1/4" - 5/8" (6.4 - 15.9 mm)
HOC & ROLLER ADJ.	Front roller: fixed position. Rear roller: screw adjustable with bolt clamp lock.
REEL CONSTRUCTION	Fairway designed reels with high carbon steel blades. All welded construction. 5" (13 cm) diameter reels.
REEL DRIVE	Reel motors feature quick disconnect for removal/installation onto cutting unit.
BEDKNIFE/BEDBAR	Opposed screw adjustment, replaceable bedknife mounted on a cast iron bedbar.
CLIP FREQUENCY (ADJUSTABLE)	Model 03505: .62" → 1.17" (15.7 → 29.7 mm); 5 blade reel at 5 mph (8.94 km/h) Model 03508: .40" → .73" (10.2 → 18.5 mm); 8 blade reel at 5 mph (8.04 km/h).
ROLLERS	Front cutting unit rollers are 2.5" (6.4 cm) diameter Wiehle rollers. Rear rollers are 2" (5.1 cm) diameter Full rollers; each roller has regreaseable bearings.

ACCESSORIES

Model	Description	Model	Description	Part No.	Description	Part No.	Description
03513	Grass Basket Kit	30707	Armrest Kit	83-5400	Front Roller Scraper Kit	75-6690	Rear Weight Kit
03512	Rear Roller Scraper Kit	03516	Thatching Reels	83-5300	High Height of Cut Kit, (3/4" - 1-3/8" (19 - 35 mm))	82-6920	Front Scraper for High Height of Cut Kit
03518	Comb Kit	03510	Turf Compensation Kit				

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Commercial Products



Falcon Fairways GC at Homestead Air Force Base, an 18-hole course for military personnel, was the only course permanently closed as a result of Hurricane Andrew.

PHOTO COURTESY of
DWIGHT MELGAARD,
LINKS ADVISORY COUNCIL

from a Hurricane Andrew nightmare

assess. Many of the most badly damaged courses are private and private golf clubs don't discuss expenses in public. Period.

Of the 42 courses responding to the FGCSA survey, loss estimates ranged from a few thousand dollars to more than a million. Most of the expense was for cleanup. Ranking second was tree replacement. A handful of courses experienced heavy structural damage — maintenance facilities and equipment, clubhouses and irrigation systems were the principal victims.

It is difficult to extrapolate an overall estimate from the survey responses because the questions were not phrased precisely enough (by Janlark Communications) to force comparable data. Still, we would be safe in putting the total cost to south Florida golf courses in the neighborhood of \$30 million, possibly much more if you throw in personal losses by golf course employees.

We could find only one golf course that has been closed as a result of the storm — and that one only because it no longer has a client base. Homestead Air Force Base has been leveled and its personnel shipped to other installations. The base golf course is

By an exponential factor, Hurricane Andrew was the greatest natural disaster in this nation's history



A 40-ton crane is used to lift a fallen oak tree at Don Shula's Hotel and Golf Club, Miami Lakes.

PHOTO COURTESY OF SCOTT WAHLIN

Except for those most badly damaged, most courses were back in operation within a week

not damaged beyond repair, however, and sources say it could be renovated if a golf course is appropriate for the site once its new use is determined. Although we could not confirm it directly, several South Florida superintendents said they understood the greens at Homestead AFB are being watered enough to keep them viable.

Other courses in or near the path of Andrew's eye—Redlands, Keys Gate, Card Sound, Kendall and Palmetto — have reopened.

Except for those most badly damaged, most courses were back in operation within a week — some within two days. Palmetto was closed for 70 days, Riviera CC in Coral Gables for nearly a month. Card Sound, at the northern end of Key Largo, reopened in three weeks. "We weren't really ready to open," notes Card Sound's Lee VanValkenburg, "but it was important to re-direct the crew's focus on why we were there in the first place."

Andrew's punch was felt all the way over on the west coast. Hibiscus GC in Naples was closed for 15 days to clean up more than 500 fallen trees and repair damage to 30 sprinkler heads, 22 irrigation control boxes and 10,000 feet of water lines.

Tree damage was the universal experience along Andrew's

path. The typical course reported more than 500 trees uprooted — Doral had 2,100 — and perhaps 200 more so badly damaged that they had to be cut all the way back.

Surprisingly few trees were lost, however. Most were set back up, trimmed, restaked and were thriving by mid-December, when this report was written.

"Nearly all the trees we lost were 'garbage' trees — exotics that we were glad to be rid of," wrote one superintendent.

To a certain extent, cleanup costs were inversely related to the length of time the course was closed. Some course managers opted to clear debris as quickly as possible to minimize loss of revenue or inconvenience to members. Others elected to clean up with fewer people over a longer period of time. In those cases, loss of income was not reported as part of the cleanup cost.

"The key to saving money on cleanup was timing," says Steve Kuhn, superintendent of Doral Resort. "The earlier you contracted help, the better. A few days after the storm, it cost \$170 to have a ficus tree uprighted. Now (mid-December) the price starts at \$700."

Kuhn also saved money by subcontracting all the cleanup work himself.

"The problem with a turnkey operation is that a lot things get

Even three months after the storm, transportation is still difficult

lost," he said. "The general contractor will concentrate on one thing at a time, whereas we could work on several projects simultaneously."

Card Sound's VanValkenburg, who also is responsible for the two Ocean Reef courses, found the experience he gained from Hurricane David a decade ago when he was at John's Island Club invaluable.

"I learned that you can't do it one hole at a time," he reports. "First you have to clear off all the greens, then the tees and fairways, getting all the debris into a few big piles before hauling it off."

It may be inefficient to clean up one hole at a time but it's easy to clean up 90 holes at once... if you have 130 workers at your disposal, as did Kuhn.

"We gave each worker a golf cart and responsibility for one hole during the first phase of the cleanup," he reports. "Each worker drove back and forth across his fairway, dragging everything into the roughs. We had the courses cleared by Wednesday, the fairways mowed by Thursday and we were open Friday. Once we got the debris into the roughs, we burned nearly 70 percent of it before the county decided to pull all burning permits."

Kuhn also noted that Doral will not purchase a single replacement tree, even though he lost about 900. "Our property is so big that we can move trees around to where we need them," he says.

While downed trees were the most visible problems that superintendents had to deal with, their real difficulties centered on communication, transportation, staff morale and power.

According to VanValkenburg, one of the most valuable commodities after the storm was a spare tire.

"It was impossible to drive very far without picking up nails in your tires during those first weeks," he reports. "I gave my spare tire to one of my crew so he could get back and forth to work but I soon regretted not having a spare myself."

Even three months after the storm, transportation is still difficult.

"It's hard to get sand or fill because all the trucks are tied up hauling debris," says Doral's Kuhn. "Right now (early December), I need about 180 loads of sand to get the Blue course ready for the (PGA Tour's) Doral Ryder Open. At this time last year, I had 40 loads a day rolling in. The best I can do now is six loads a day."

VanValkenburg had a unique problem. His three courses are irrigated with desalinated water from a reverse osmosis plant that requires as much electric power as his irrigation pumps.

"We were finally able to get a big generator, but it wasn't big enough to run both the R-O plant and the irrigation system, so first we made water and put it into the reservoir and then we switched the generator over to the pumps so we could flush the system and then get water on the greens. We were without water for about seven days."

Almost universally, superintendents said planning and taking care of their crews were the two keys to successful recovery.

"We had to get our people housed and fed," said

VanValkenburg, whose workers all lived in Homestead and lost everything. The hotel at Ocean Reef housed employees and their families while Card Sound found apartments for its homeless employees and underwrote the additional costs.

"I evacuated Key Largo to the mainland and rode out the storm in Homestead," recalls VanValkenburg, noting the irony of having "escaped" to ground zero. "The only good thing I can say about that experience is that I can totally relate to what my crew and their families went through."

Doral also housed its employees and their families, some in hotel rooms and others in hastily converted banquet rooms.

"The hotel was full at the time of the storm and as the guests left, relief workers took their place, but we found room for all the employees who needed shelter," Kuhn says.

Most superintendents marveled at the resilience of their crews.

"The 26 maintenance and pro shop employees suffered about \$2.2 million in damage to their homes and personal property, yet they all worked additional hours," wrote Carlos McKeon, superintendent of Palmetto GC.

"If ever a bunch of people had true grit, it was my crew," said Rick Hill, superintendent at Kendall GC.

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The pro shop at Falcon Fairways GC at Homestead Air Force Base, above, was left in terrible shape by Hurricane Andrew. Below, Miami Palmetto Golf Course shows how firm a golf ball was lodged in a palm tree. How it was put there, by a golfer or the hurricane, is unknown.

PHOTOS COURTESY OF
DWIGHT MELGAARD,
LINKS ADVISORY COUNCIL



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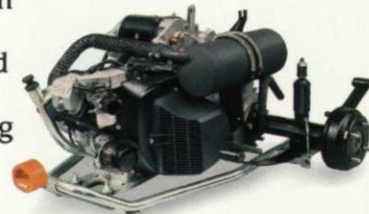
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*As reported by the Center for Golf Course Management, a subsidiary of the Golf Course Superintendents Association of America.

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Cleaning up after Andrew –

Faith, hope and most of all —time

BY SCOTT WAHLIN

‘In all, we had 500 trees down with another 250 requiring work.’

Statement issued by the National Weather Service at 2:30 p.m.: *Extremely dangerous Hurricane Andrew heading for southeast Florida... Andrew continues to strengthen with maximum sustained winds of 150 mph... all residents in the hurricane warning area must take immediate precautions to protect life and property... please listen to the people who are trying to save your lives. At the present time Hurricane Andrew has wind speeds and a minimum central pressure comparable to the Great 1926 and 1928 Hurricanes that hit Miami and Palm Beach killing hundreds...*

Living and working through Hurricane Andrew was far more traumatic than I had anticipated. Four days after the storm I realized that hard work alone was not going to heal the psychological wounds experienced by everyone in this community. Faith, hope, and — most of all — time, would be required.

At Don Shula’s Hotel and Golf Club in Miami Lakes, we have a checklist of what is to be done prior to hurricane season, what to do in the event of a hurricane warning and how cleanup work is to be prioritized. We meet annually to discuss and revise these checklists.

Expectations are made perfectly clear in this meeting. I require assistants and mechanics to help in preparation and cleanup. This includes putting up shutters at the hotels and store fronts.

My goal is to let everyone go early enough to prepare their own homes.

Andrew came so fast that this was not entirely possible. My wife and kids put up the shutters at my house. We started preparing the golf courses at 5 a.m. and finished putting up shutters at 9:45 p.m. with only short breaks.

It is important to inventory the chemicals, fuels and oils immediately before a major storm. If an environmental cleanup is necessary, the inventory

will help make sure you get it all. Photographs of equipment, tools and offices may be helpful for insurance claims.

My family and I stayed in the resort’s hotel the night of the storm. I may have considered staying in my house for a hurricane prior to this experience but not anymore.

I checked the golf courses at 8 a.m. after the storm passed. It would be impossible to capture the essence of what I saw with a photograph:

Eighty-foot trees were ripped from the ground with their roots intact. Stands of tall Australian pines were snapped off at ground level and fell into a weave extending up 60 feet. Ficus trees with bases 8 feet across were thrown on their sides. In all, we had 500 trees down with another 250 requiring work.

A lot of people in South Florida did not have shelter, so our first priority was to make the hotels accessible. By the second day after the storm, we had 50 people cleaning up, including four tree companies, our grounds crew and salaried executives of The Graham Companies.

We began on the golf courses by hand-raking all greens, tees and fairways. We cut and stacked all the wood in the roughs.

It is important to get a competent tree company on the job as soon as possible, but hauling the material away should be done by an excavating or engineering company experienced with moving massive quantities of brush in a short period of time. Fortunately, the Graham Companies Development Division has excellent relationships with several of these companies.

They used four tandem dump trucks, a backhoe/loader combination and a large loader with a standard bucket. Using the two loaders together to pack the material into the large loader, they could load a truck in a matter of minutes. They took 1,650 loads off the courses in 20 days.

We used a 40-ton crane, a smaller crane, and a backhoe to set up 24 large trees including large



Scott Wahlin is superintendent at Don Shula’s Hotel and Golf Club in Miami Lakes.



‘ We worked 10-hour days for 14 days straight. This was a mistake. ’

oaks, African mahoganies, black olives and ficus. We dug a hole at the base of each tree with the backhoe and lifted and guided it in place with the cranes. A small loader replaced the soil around the base of the tree and this soil was watered into place using a 1,000-gallon water truck. Once the tree was in place, it did not require additional bracing.

Of all the trees we stood up, we lost only one oak.

It is probably better to wait until the local government has time to set up free dump sites before moving any debris farther than the closest rough area. Paying for your dumping can run into tens of thousands of dollars. And free dump sites will be open before you can get a permit to burn .

You can chip the debris if you don't have too much. I looked at one large chipper that went for \$3,500 per day. My project would have taken weeks and I would have been left with a mountain of mulch.

I was shocked to find that this tree work was not covered by our insurance. One agent told me he would be surprised if anyone were insured for this.

Business interruption resulting from the cleanup is covered. Removing trees from insured property (i.e., fences) is covered, but cleaning up your course after a storm usually is not covered.

Several weeks after the hurricane I was visited by an extension agent who told me he did not understand why golf courses should not receive funds from the Agriculture Stabilization and Conservation Service. I contacted Miles Hewett of the ASCS in Washington who told me that golf courses were specifically excluded because they are not considered production agriculture.

Don't expect any breaks from your local government. Shortly after the storm, the Dade County Department of Environmental Resources Management sent me a certified letter requiring me to build a containment berm around our maintenance shop and apply a chemical-resistant coating to the shop floor

I was surprised at how much qualified cleanup help was available. There was adequate time and resources available to shop for price and get good companies. I developed a considerable list of qualified companies capable of doing the work.

Many companies including Stihl would only ship chain saws and generators to Miami. Several out-of-town tree companies asked to use our shipping address to get supplies they needed to help their customers in South Florida.

The morning after the hurricane, people came from everywhere to clean up streets and check on their neighbors. I found two guys working with our landscape crew who just came from a shelter and volunteered.

I think everyone experienced an initial sense of shock and rush of adrenaline. It was almost as if we got a lot of work done today and we would feel better. It did not work. The situation was unreal but it was our reality just the same and it would be for quite some time.

We worked 10-hour days for 14 days straight. This was a mistake. Our crew became quite fatigued which reduced efficiency and increased tension. It had been quite a long time since we had a good fight in the shop and we had one. In addition, we all had work to do at home so no one really got much rest when they left here.

I could probably write a book about my experiences with Hurricane Andrew. I could probably do the same regarding a horrible car accident I had on my way to Lake City Community College one January morning in 1982, or my father's unexpected death in my arms on the golf course on December 24, 1984.

I thank God for the events in my life that help me to gain wisdom and develop perseverance. I would say this experience was as traumatic as any I have been through, and I am eager to put it behind me.

Faith, hope and, most of all, time...

‘ I thank God for the events in my life that help me to gain wisdom and develop perseverance. ’



PHOTO COURTESY OF SCOTT WAHLIN

This fallen African mahogany was one of 10 such trees at Don Shula's Hotel and Golf Club that was uprighted and saved, according to Scott Wahlin, superintendent.

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BY EDWARD RAMEY

I guess the first question would be, “Why would you want to sit through a hurricane?” Just crazy, if you ask me!

I have been in Florida since 1956 and have gone through all of the hurricanes over the years and did not believe Hurricane Andrew could be worse than any of the previous ones. It was!

The place to start would be about 11 p.m. on Sunday, Aug. 23. We had boarded up the house and were watching the TV updates on the hurricane when it was announced that Andrew would come in at the Turkey Point Power Plant area which was less than six miles from our home. At this point, we felt it was too late to get out, so my family (which consists of wife Jeanne, daughters Robin and Tara, and Robin’s boyfriend, Arnold) got caught in Homestead.

We decided to move the cars to a safer spot and went out and reinforced the house as best we could. Then we settled down for Andrew, who was about to change thousands of lives overnight.

Around 2:30 a.m. on Monday, we lost the power and we went to candles. Then at 3:15, we started to get the first high winds and the house began to shake. A few minutes later, windows blew out in the living room and the front bedroom. At 3:45 a.m., it became very calm and we went outside for a look.

Trees were down all around and trash was piled up all over. In a few minutes the wind and rain started up again so we retreated back inside. This is when all hell started to break loose!

Another window went so we moved into the hallway and sealed all the doors in that area. The entire house felt like it was going any minute, so we all went to the bathroom in the center of the house and locked ourselves in.

Sometime in the next hour, the master bedroom blew out and the roof went. We sat in that bathroom till daylight! The winds had quit, light rain was falling, and all was quiet so we ventured out of the bathroom for a look.

What we saw was beyond words!

Two to three inches of water was throughout

the house; the master bedroom was totally destroyed, all the plywood around the house was gone as well as all our neighbors. No tiles were left on any of the homes around us, and many of the roofs were completely blown off.

I climbed up on the roof for a better view of the area and all I could see was total devastation all around us. Power lines were on homes, cars were turned over, items that had been stored in people’s attics were thrown outside in the streets, small animals were wandering around, birds were so wet they could not fly; and all around, people were crying and screaming, many of them in shock.

For two days we just wandered about the house trying to save what we could. The ceiling in the living room was still there so we moved what we could into that area. The next day, it too fell in. So we pulled all we could out and moved it to the kitchen, the only room with a ceiling left.

My wife went out Tuesday afternoon to check on her co-workers and found a telephone that worked so we were able to call out for help. I got my insurance agent at State Farm and then my brother in Pompano so we would have someplace to go. We siphoned enough gas from our cars to get one full tank so we could attempt to leave.

As we drove, we saw that Florida City was mostly gone, Leisure City was also destroyed and, when we got to the Turnpike, it was evident how far and wide Andrew had gone — all up the Turnpike to Kendall was a complete mess.

Thousands of people were around their homes trying to save what they could. I could not help but feel grateful that I had a way to get out and a place to go.

Since that day, I have returned four times to try and salvage some of the contents of our home. Each time the guilt was worse.

I guess that time heals all wounds but, how long is time? This will be a long-term healing process for everyone.

EDITOR’S NOTE: *Ed Ramey, former president of the South Florida GCSA, asked that the customary fee for articles by FGCSA members be donated to the association’s Hurricane Andrew Relief Fund.*

‘ Then we settled down for Andrew, who was about to change thousands of lives overnight ’



“For two days we just wandered about the house trying to save what we could. The ceiling in the living room was still there so we moved what we could into that area. The next day, it too fell in. So we pulled all we could out and moved it to the kitchen, the only room with a ceiling left.” — Ed Ramey



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Relief Fund helped employees recover

‘...The people who needed help the most not only didn’t have telephones, they no longer had addresses!’

Three years ago, David Meda, assistant superintendent at Boca West CC, suggested that Florida superintendents might want to send some money to their colleagues in coastal South Carolina who had been hit hard by Hurricane Hugo.

“That could just as easily have been us,” he said at the time. “Sometime it *will* be us.”

So with the blessing of the FGCSA board of directors and some help from Executive Secretary Marie Roberts, Meda conducted a fund-raising campaign for South Carolina golf course employees who needed help in recovering from Hurricane Hugo. His fund drive netted \$4,395, including donations from the state organization, five chapters and several individuals, many of them suppliers.

Three days after Hurricane Andrew leveled much of South Florida last August, Meda’s fund-raising juices began flowing once more.

At the board meeting of the Palm Beach GCSA at Emerald Dunes GC in West Palm Beach Aug. 27, Meda proposed that the chapter establish a relief fund for Andrew’s victims, specifically the golf course maintenance employees whose shelter, clothing and means of transportation were part of the \$10 billion in property destroyed by the storm.

“We liked David’s suggestion and decided to donate \$1,000 to the effort,” says Paul Crawford, president of the Palm Beach chapter, “but we thought it was a project for the state association.” Crawford, who also is vice president of the Florida GCSA, referred the suggestion (and the check) to the state board which quickly established the Hurricane Andrew Relief Fund and asked Roberts to enlist the support of the GCSAA in publicizing the relief effort.

The national organization responded quickly, not only by sending a news release to



After putting in long hours helping their golf courses dig out from the destruction left by Hurricane Andrew, hundreds of golf course employees went home to hungry families in severely damaged houses and apartments. The FGCSA Hurricane Andrew Relief Fund helped many maintenance employees begin to put their lives back together.

PHOTO BY ED RAMEY

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Hurricane Andrew Relief Fund Donors

Donor	Amount	Grp total
GCSAA	\$5,000	
Florida GCSA	1,000	
		\$6,000
Florida chapters		
Central Florida	1,000	
West Coast	1,000	
Palm Beach	1,000	
South Florida	1,000	
North Florida	500	
Treasure Coast	500	
Florida Chapters		6,000
Out-of-state chapters		
Carolinas	2,500	
West Virginia	1,000	
Central Illinois	750	
Finger Lakes	500	
Long Island	500	
Mid Atlantic	500	
Ontario	500	
Western Michigan	500	
Connecticut	400	
Greater Cincinnati	250	
Out-of-State Chapters		7,400
Misc. Individuals	790	790
Total		\$19,190

all chapters and media outlets, but also with a check for \$5,000.

"We are also encouraging all GCSAA chapters and members to help with this effort with contributions," wrote GCSAA President William R. Roberts, CGCS. "We hope that golf course employees as well as everyone affected by this tragedy will recover quickly."

As of early December, \$19,190 was raised, including \$6,000 from Florida chapters, \$7,400 from out-of-state chapters and \$790 from individual superintendents.

"It was the help from national that really made it a success," says Roberts. "The \$5,000 check obviously was a big help but their news release and support is what got the money coming in from around the country. That's what made the difference."

The second-largest contribution came from the Carolinas GCSA, which reciprocated for the FGCSA's earlier relief assistance for Hurricane Hugo with a check for \$2,500. Some of the individual contributions came from superintendents in the Carolinas as well.

As of mid-December, \$15,400 had been distributed to 32 employees at nine different golf courses in southern Dade County.

In some respects, finding the right people to help was harder than raising the money.

"We wanted to make sure we got the money to the people who really needed help, not just to those who were first to get in line," said Bill Entwistle, Jr., president of the South Florida GCSA, the organization charged with distributing the funds since the most heavily damaged area falls within its boundaries.

"The phones were down and, most likely, the people who needed help the most not only didn't have telephones, they no longer had addresses," he said. So Entwistle enlisted the aid of some supplier members who lived in South Dade

Apartment survives storm but not looters

Miguel is a spray technician employed at the same golf course since 1987. He lived with his wife and 2-year-old daughter in Leisure City, which is about midway between Kendall and Homestead.

The apartment building where he lived received little structural damage, but his car was badly damaged by flying debris. However he lost quite a bit more in the two days following the storm. While he was out trying to find other members of his family, thugs and hoodlums took control of the apartment building and looted, stole or wantonly destroyed nearly all the possessions of the tenants who weren't home to defend their property.

Damage to the car was covered by insurance but he has lost all his personal possessions and has no place to live.

Relief Fund Assistance Granted

Facility	Recipients	Grants
Calusa CC	3	\$1,500
Card Sound GC	4	2,000
Coral Gables CC	5	2,500
Deering Bay CC	3	1,500
Doral Resort & GC	3	1,400
Indian Creek GC	1	500
Keys Gate GC	3	1,500
Palmetto GC	6	3,000
Riviera CC	4	1,500
Total	32	\$15,400

or at least traveled to the area frequently.

"We asked them to stop at every golf course along the way and let them know that this help was available," said Entwistle, who noted particularly the help of John Mahanna of Nucrane Machinery and Mark Richard, CGCS, of Metro Dade County.

"We asked the superintendent to contact me or one of the other board members and describe the situations of his people who might qualify for the funds," he said. "If we didn't think they were as bad off as some of the others, we told the superintendent up front. If we thought they qualified, we asked the superintendent to put the application in writing."

After talking to several superintendents to get a good feel for the worst-case needs, Entwistle and his board members reviewed the first half-dozen applications as a group to establish some criteria based on the applicant's insurance, immediate needs and prospects for help from other sources. The SFGCSA board authorized Entwistle to screen the rest of the applications, using the criteria the directors had established.

"We think we did a pretty good job of getting some help to everyone who needed it the most," he says, "We still have a few applications pending but we're kind of holding off, hoping we get some more money in so we can give them as much as we gave the others."

"And we have a few people who could have used much more help than we were able to give them the first time around."

Elderly mechanic loses auto to falling tree

Armando is an elderly mechanic who is close to retiring from the golf course where he has worked since 1986.

He and his wife own their home but they did not carry enough insurance to cover the extensive damage it received: part of the roof and the interior walls and nearly all their furniture and clothing. Their car was damaged by a falling tree.

He received some help from FEMA toward the clothes and furniture but nothing toward the car.

"If we had another \$4,000 or \$5,000, we could use it, but I don't think we would need more than that to do the job that the fund was intended to take of."

"...For any organization to offer assistance not only to members, but to members' staffs as well, in these situations is a

very commendable act," wrote Rodney McNeill, superintendent at Calusa CC in Miami. "It makes me really proud to be in this profession and to be a member of the SFGCSA."

While the association expects to virtually empty the special tax-exempt bank account through which the donations were made, the account itself may not be closed. "This is Florida," said Crawford. "We'll probably need it again. There have been some discussions on keeping it open but dormant. It will make it that much easier next time."

According to Entwistle, the best thing a chapter can do to prepare for "next time," is to set up an emergency communications plan to get in touch with all members when the phones are down and most of the roads are impassable.

"We could have reached the people who needed help a lot quicker if we had set up a system for contacting everybody that didn't require telephones or electricity," he said.

Mechanic lost home; wife's job destroyed

Jose is a head mechanic, employed at the same golf course since 1985. He and his wife and five children live in a rental home near the Country Walk development which received extensive news coverage for the devastation it suffered.

None of their personal property — clothing, furniture, personal effects — was insured.

Jose's wife lost her job when the department store in Homestead where she worked was destroyed by the storm.

The family had two cars. The better one was destroyed (no comprehensive insurance) and the other is running on Jose's ingenuity.

Although Jose's landlord is rebuilding the house as quickly as possible and he has a place to stay in the meantime, he must replace the family car and his clothes, furniture and personal items.

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The wrecking and rebuilding of Deering Bay Country Club

BY JOEL JACKSON, CGCS

Prelude

Last August, Jim Ellison, CGCS, sat in front of the TV nervously watching as Hurricane Andrew snaked its way unflinchingly toward the Florida coast. But where will it hit?

As the days passed before the inevitable landfall, ground zero shifted southward from Vero Beach to Palm Beach, and finally to Miami.

Ellison is the director of agronomy for the Arnold Palmer Management Group based in Orlando. He had been ticking off the golf courses under his direction that could be potential victims of the storm's fury. Finally, the battle lines were drawn. The last known position of Hurricane Andrew indicated a probable landfall just south of Miami, and Deering Bay CC appeared to be in Andrew's path.

Deering Bay CC is located on the western shore of Biscayne Bay. Once the site of the old Kings Bay Golf Club, the layout had been redesigned and rebuilt by the Palmer company. Grow-in was recently completed and the course was in beautiful condition, and Jim was pleased with the job that construction superintendent Bobby Miller had done.

Jim began a search for a permanent superintendent, but that search was to be interrupted by Andrew. The Deering Bay staff packed up and removed what merchandise and furniture they could from the temporary pro shop and sales center and brought all the maintenance equipment into the maintenance building.

Like the rest of South Florida, there was nothing more to do but wait and hope and pray.

Aftermath

The actual point of the hurricane landfall was estimated to be a few miles south of Deering Bay. That put the course in the path of the strongest winds and the maximum tidal surge. Like the coastal courses in South Carolina that felt the wrath of Hurricane Hugo, Deering Bay was punished severely by Hurricane Andrew. There wasn't a single tree left standing or intact. Debris literally covered every square foot of the project. A high-water mark left on the interior walls of the maintenance building was 8.5 feet off the ground. Since the maintenance building was located on some of the highest ground in the project, it was estimated

that most of the course was inundated by 12 to 15 feet of water for a period of 10 to 12 hours. While the wind damage was the obvious witness to the destruction, it was the flooding that caused the greatest problems to the course.

The entire inventory of turf maintenance equipment was rendered useless and unsalvageable by the lengthy submersion in salt water.

The entire irrigation system, including the pump station and field controllers suffered the same fate. Individual heads were packed with sand, silt, and debris. On many holes 2 to 3 inches of sand and silt buried the turf. All bunkers had lost their shape and definition. Erosion destroyed gentle rolls and swells. Trees and other wind blown objects were dragged across the turf and ripped it to shreds.

All of this surface and mechanical damage paled by comparison to the potentially disastrous effects of the salt contamination of the irrigation water supply and the turf and underlying soil profile.

Realization and reaction

The Hurricane hit on a Monday. Jim Ellison and Bob Holtzman, vice president of operations for APMG, were on the second or third flight into Miami after the airport opened. They anxiously made their way through the littered streets to the Deering Bay site. And a "site" is exactly what it had once again become. The early reports out of Miami weren't encouraging, but Jim was not was prepared for what he saw. "The initial viewing of the destruction was just gut wrenching. Beyond words. Just incredible. I mean — boats on top of houses."

Since Deering Bay had no current superintendent, Jim enlisted the aid of three APMG superintendents from central Florida to help supervise and coordinate the initial recovery effort. They were all quartered at hotels in town and had to make the tedious trek to and from the course. A 15-mile journey that usually took a few minutes now lasted 45 minutes to an hour.

Dwight Kummer from the Bay Hill Club in Orlando was the first to arrive. "I literally had to blaze a path to the entrance of the property and cut my way through to the course. Everything was totally devastated. I have never seen anything like it."

When asked what his course would look like after a storm of this magnitude, he replied simply, "probably about the same." And what steps might he take to

‘ Beyond words. Just incredible ’

‘ It was the flooding that caused the greatest problems ’

‘ Pictures and words don’t do justice... ’

minimize the damage to his equipment?

“I would try to disperse my equipment to locations that would be relatively safe from flooding.” The lack of power and unavailability of supplies so soon after the storm prevented Dwight from making very much progress other than some rudimentary clearing.

Tom Trammell, CGCS, of the Turtle Creek CC in Rockledge was the next volunteer in rotation to head south and lend a hand. He packed up his truck with ice, food, and basic supplies, and what proved to be the first chain saw to arrive on site. As he approached the wasteland that was once South Miami, he recounted his first impression, “The destruction was incredible. It was so eerie and unreal. It gave me goose bumps and made the hair on the back of my neck stand up. It was saddening to see the results of hundreds of years of growth wiped out in a few hours.”

By the time Tom arrived, curfews had been implemented and roadblocks installed, which compounded the slow trip

to the course each day. While Tom got involved in some of the early agronomic recovery, he says one of his biggest contributions was just bringing in basic supplies.

While the resident staff was understandably in shock, Tom felt that the volunteer staff had good morale and tried to get things going.

And what lessons did Tom learn from his experience?

“Well, I didn’t waste any time in beginning to put together a hurricane plan for Turtle Creek. I involved everyone in management to determine specific lines of communications and responsibilities.”

By the time Steve Sorrell of the Metro West Country Club in Orlando got to Deering Bay, the course was mostly cleared except for the 18th hole. Steve’s reaction to the destruction: “Pictures and words don’t do justice to seeing the real thing. You just can’t comprehend the magnitude and scope of this damage from photos and TV images.” That magnitude

of damage was illustrated by the fact that it took 15 people a day and a half to clear that 18th hole.

While in Miami, Steve contacted an old friend Jerry Broome, superintendent of The Club at Emerald Hills, who lived in the South Miami area. Jerry said of his experience of riding out the storm, “I’ll never stay again. It was the first time in my life that I have ever really been scared.” Steve echoed that sentiment when asked how he would prepare Metro West for a hurricane like Andrew. “No amount of preparation could prevent the kind of damage that I saw. Of course we’d take what precautions we could, but I would have to evacuate my family from the area and come back when it was over and put it back together.”

Putting pieces back together

After the debris-clearing was accomplished, the battle to save the turf began in earnest. Since Dwight, Tom, and Steve had their own courses to manage in Cen-

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Salt damage on the 16th green was so severe that the green was lost.

PHOTO COURTESY APMG

‘Greens were barely kept alive by hand watering’

tral Florida, Jim rehired Bobby Miller, the original grow-in superintendent, to supervise the tedious day-to-day operations that would be necessary to restore Deering Bay. “We were fortunate in being able to get Bobby back. He knew the course and where everything was located. He did an excellent job.”

New turf equipment was brought in, a new pumping station installed, and portable generators hooked up to provide power. The mud, sand, and silt that covered several holes was swept up by rotary street brooms mounted on tractors and hauled away. The salt-soaked grass began to wilt and scald under the hot sun. The turf desperately needed fresh water. The deep wells that filled the irrigation holding ponds were tested and after flushing for 30 minutes pronounced fit to use. But the ponds were contaminated with sea water and unusable. After four to five days of sun and heat, the parching effects of the salt were becoming almost terminal for the turf. Greens were barely kept

alive by hand watering with a 150-gallon spray tank.

Finally, mother nature relented and provided rain showers that aided in flushing the salt from the turf. It took nearly a month of alternately filling and draining the irrigation ponds to decontaminate them.

After the rains reduced the stress caused by the salt, mowers began mowing the tees and fairways approximately two weeks after the storm. Once the irrigation system was back in operation, two applications of gypsum at a rate of two tons per acre were applied to neutralize the remaining residual salts. A wall-to-wall granular fertilizer application was made in between the gypsum applications.

A program of reinstalling the \$1.5 million landscaping that was wiped out took just as much patience. Since the local nurseries’ inventories of tropical plants were also destroyed, the owners had to find replacement plant material in

other Caribbean and South American countries.

If there can be a silver lining found behind the cloud of destruction of Deering Bay, it would be the addition of an aquatic driving range and the rerouting of three holes. The original land forms just didn’t logically provide space for a driving range. The storm damage to a couple of holes necessitated some redesigning.

The first, second, and 13th holes had to be moved, and the water hazard expanded on the 13th to create an island green and the additional “aqua range.”

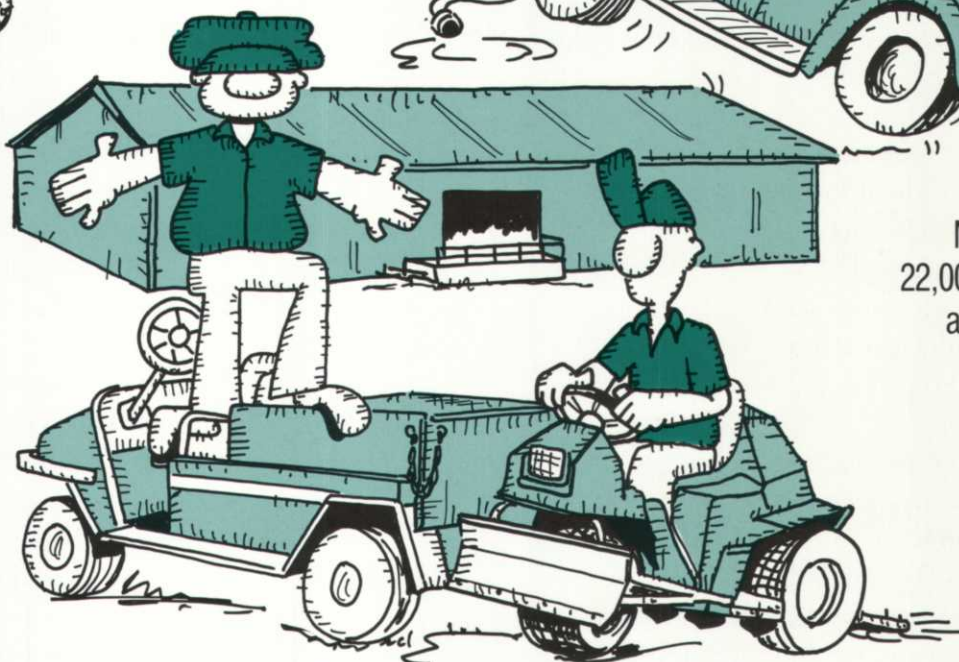
On Dec. 15, approximately four months after Hurricane Andrew destroyed the Deering Bay CC, Jim Ellison, CGCS, once again boarded a plane for Miami. This time it was to celebrate the tremendous rebuilding effort and the grand re-opening.



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South Florida got a rude wake-up call this past September from Hurricane Andrew. We have been told every year that it could happen, but we have been spared a major storm for several decades.

It finally happened, and with such devastation that it boggles the mind. Entire neighborhoods just vanished in truckloads of debris. Indeed, it was a grim reminder of the sheer power and magnitude of force that nature can unleash. Recovery and restoration has been a slow process as people who have never witnessed such destruction painfully learned that what man has joined together nature can easily put asunder.

Of course the true measure of people is how they respond to difficulties and challenges. I don't doubt for a minute that the people of South Florida will rebound with determination and tenacity and rebuild their homes and businesses. Among them will be our brother superintendents who have had to put their courses back together from the chaos and damage generated by the hurricane.

While the magnitude of this clean-up and restoration back to normal is way off the scale from what many have ever faced before, the patience and perseverance that superintendents have come to practice when dealing with the vagaries of nature will stand them in good stead. Superintendents are used to managing turf during times of severe drought, waiting out day after day of thunderstorms that prohibit routine

mowing and grooming, days and weeks of overcast skies which weaken and discolor their greens, unseasonable cold snaps that shock the turf, and likewise surprise warm spells in the fall that threaten newly overseeded greens.

While some of these dealings with nature seem trivial in comparison with the aftermath of the hurricane, they are the character-building experiences that make up cloth from which people who work with nature are cut. They are tough and resilient. They don't try to "fool mother nature," but rather apply their skills and knowledge to offset the conditions presented by nature.

It has been said that the disaster has brought many people together as they work for the common goal of rebuilding their homes and neighborhoods. I hope that likewise the members of the affected golf courses in the area will gain a better appreciation for the hard work, dedication, knowledge and ingenuity of their respective superintendents as they restore playable conditions to the courses.

Hopefully, they will work closer together in the future to minimize the damage and negative effects of storms, floods, and drought by investing the infrastructure at the club and participating in the regulatory process of our natural resources.

A parting thought from John Milton's, *Paradise Lost*:

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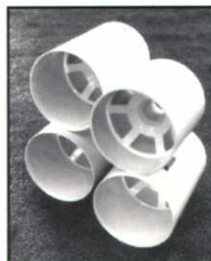


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