

Summer 2010

Green is Beautiful

The Official Publication of Ontario Golf Superintendents' Association

From Tornado to Thank You

Also inside this issue.....

Are You Ready for Winter?

The Heat is On ...Stretching Your Budget

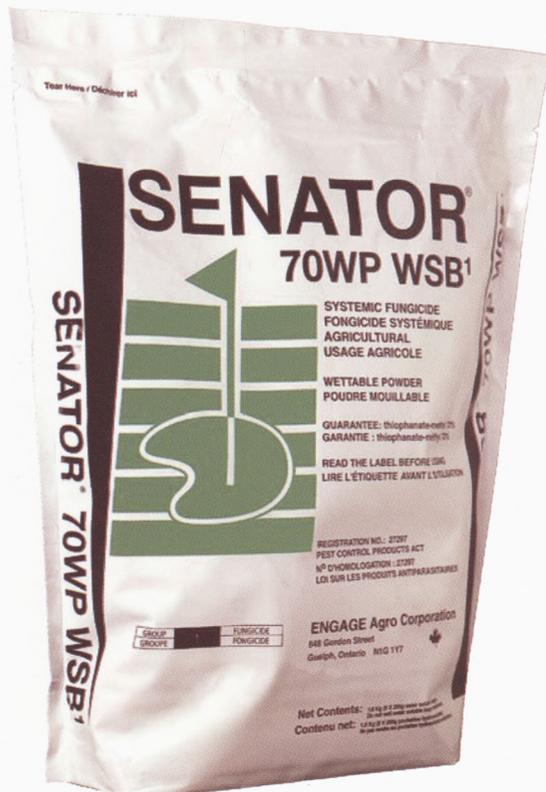
The Art of Watering by ET- Volume vs. Minutes

CANADA POST PUBLICATIONS MAIL
PUBLICATIONS AGREEMENT No. 40027105

Postmaster: Please return undeliverable copies to
The OGSA, 328 Victoria Rd. S., R.R. # 2 Guelph, ON N1L 0H2

SENATOR[®] WSB

Cut Cost. Not Control.



Worried about Dollar Spot
and your Budget???

- Rate: 30 g/100 m²
- 1 case (6.4 kg) = SRP \$670
- Case coverage = 5.27 acres (\$127/ac)

What to expect:

- The most cost effective 14 day dollar spot control
- Acropetal systemic protection (upward movement)
- Rotational product (group 1 fungicide)
- Broad-spectrum protection

For more information please call Engage Agro at
1.866.613.3336 or visit www.engageagro.com

ENGAGE AGRO

President's message

As a golf course superintendent we have the opportunity to be involved in decision making with other managers or club officials to develop your facility. We also have the ability to create proper maintenance practices that suit your property to bring the best possible playing conditions for your clients. When we create tasks or improvements, where do we go to get the job done to fulfill not only your club's expectations but your own? We go to our staff members!

This President's message is dedicated to all Ontario golf club staff members. Whether you are a general manager, golf course superintendent, head golf professional



What's a golf club without its staff?

or a food and beverage manager, we are all trying to create a dedicated team that will meet our needs as managers. At any great golf course, team work is a must to accomplish the tasks at hand. I truly believe in building a team, somewhat similar to hockey. You need your goal scorers, 2nd liners, 3rd liners, grinders and of course, your special teams.

When it comes to staff there are so many unique individuals with very different personalities and work ethics. As a manager, try to understand each individual and build on their strengths as an employee and utilize them to the fullest. Get to know your staff! Communicate with them at every level and know what's important to them. Always keep an open ear.

Motivating staff can be difficult. Positive criticism has to be voiced that the task was done well and how can the individual take it to the next level to provide a better outcome. Engage your staff and make sure they know that they are part of the solution and that every task is important, because it is!

Make team building fun! I like doing staff barbecues, especially after successful club events. Staff golf days at neighbouring golf clubs are great fun and it's a good way to introduce the game to staff that have not had the opportunity to play golf. Make sure you create different teams which help with camaraderie and staff bonding. Whatever you choose to do, have something that staff can enjoy which creates a different atmosphere than work.

I'd like to take this opportunity to thank all golf club staff for their hard work and dedication in making Ontario golf clubs great! Special congratulations to Keith Bartlett MS, CGCS and his staff at St. Georges Golf and Country Club for hosting a successful RBC Canadian Open. All the best for the remainder of the golf season!

Brett Murray
Manager

Direct Line 416-659-1020
Fax Line 519-941-0931

P.O. Box 218
Orangeville, ON
L9W 2Z6



H & M TURF Ltd.
Country Club Line

brettmurray@primus.ca

"Green is Beautiful"
is Printed on Recycled

Paper



ONTARIO GOLF SUPERINTENDENTS' ASSOCIATION

Guelph Turfgrass Institute
328 Victoria Road South
Guelph, ON N1L 0H2

Ph: 519-767-3341
Toll Free: 877-824-6472
Fax: 519-766-1704
Email: ogsa@gti.uoguelph.ca
Website: www.golfsupers.on.ca

BOARD OF DIRECTORS

President: Jeff Alexander
Past President: Randy Booker
Vice-President: Chris Andrejicka
Treasurer: Doug Green
Secretary: Rob Gatto
Directors: Stu Leachman
John McLinden
Mark Prieur
Jennifer Pendrith
Phil Scully
Chad Vibert

Editor &
Executive Mgr: Dorothy Hills

Office Staff: Pat Thomas
Deborah Badger



GREEN IS BEAUTIFUL EDITORIAL COMMITTEE

Dorothy Hills
Greig Barker
Tom Brain
Paul Grotier
Jason Hanna
Scott Horsburgh
Justin Parsons
Andy Sandilands

Green is Beautiful 2010

Although every effort is made to check material for publication, the association is not responsible for material published on behalf of its contributors.

All rights are reserved by the publisher and any reproduction in whole or part without the written permission of the publisher is prohibited.

Although some trade names may be mentioned in articles contained in this publication, no endorsement is intended or implied by the Ontario Golf Superintendents' Association.

Contents

FROM TORNADO TO THANK YOU	20
Above the hole	14
Are You Ready for Winter?	13
Editorial message	5
From roots to shoots	10
Health & safety	8
Heat wreaking havoc on golf courses nationwide	30
Looking back	36
Off the fairway	35
On the REEL side of things	32
President's message	3
Second to one	28
Turf or consequences	38
University of Guelph update	26
What's new	6
Winter preparation in the north	15

Advertisers

Agrium Advanced Technologies	7, 39
Almack Agronomic Services Inc.	37
Aquatrols	31
ArbourTurf Solutions	37
Bartlett Tree Experts - Canada	29
Bayer Environmental Science - Rovral Green GT	14
Braemar Building Systems	23
Burnside Golf	29
DCS Agronomic Services	35
Douglas Wood Large Tree Service	31
Engage Agro Corporation - Senator® WSB	2
Enviro Sol	27, 29
Fast Forest	37
G.C. Duke Equipment Ltd.	9
Green Horizons Group of Farms	9
H & M Turf Ltd.	3
Innovative Agronomics Inc.	35
Maple Turf Supply	7
Master's Turf Supply Ltd.	17
Nutrite	12
Ontario Seed Company	29
Plant Products - Thinking Super	34
Robert Kains Golf Course Design Ltd.	37
Turf Care Products Canada - Irrigation	5
Turf Care Products Canada	40
United Agri Products Inc. - Rhapsody	9
Vanden Bussche Irrigation	28
Zander Sod Co. Limited	29

Green is Beautiful

The Official Publication of Ontario Golf Superintendents' Association



COVER PICTURE

Brampton Golf Club - 1st hole
Photo by John McLinden

**OGSA is committed to
 serving its members,
 advancing their profession,
 and
 enriching the quality
 of golf
 and its environment.**

Layout, Design & Printing provided by
G·R·A·P·H·I·C SERVICES PRINTERS & LITHOGRAPHERS
 Tel: 519.763.5745 • Fax: 519.763.9532
 32-34 Essex Street • Guelph, Ontario • N1H 3K8
 e-mail: info@graphicservices.ca
www.graphicservices.ca

Editorial message



by Dorothy Hills

As I write this message from my air conditioned office, the mercury is hovering on 30°C mark and it looks like there will be no relief for a few days yet. You may be thinking it's a little premature to ask the question, "Are you ready for winter?" however, it won't be long before the nights turn cool and the leaves start to show their autumn colours. As our next issue of *Green is Beautiful* will not be released till mid November, we thought it would be beneficial to touch on the subject of winter kill. Pam Charbonneau has detailed some lessons learned from the winter of 2009/2010. Matthew Legg has outlined how Weston Golf and Country Club, in the GTA, prepared for last winter, revealing the results and what was learned. And from the northern region of Ontario, Jeff Alexander has provided information as to how Parry Sound Golf and Country Club prepare for the winter.

Although we've mentioned winter, summer isn't over yet. Be sure to read the article by Darryl James on the art of watering by evapotranspiration.

Superintendent, Michael Toth has provided us with our

feature story about how people in the golf industry pitched in to help get Erie Shores Golf and Country Club up and running again after a F2 tornado touched down in Leamington, doing massive damage on the course.

After much research, discussion and deliberation it has been decided by the OGSA Board of Directors that our official member publication, *Green is Beautiful* will be published and distributed by Blenheim Ink, located in Burlington and drawing from Ontario based resources. Commencing with the Fall 2010 issue of the magazine Blenheim's professional staff will be handling many of the management, advertising, billing and editorial tasks which, over the years, have been managed in-house. We are all working as a team towards making this new initiative a seamless transition. Along with the support of OGSA's editor, editorial committee and esteemed contributors, Blenheim Ink have committed to building on the strong history of *Green is Beautiful* as the go-to, informative and value-added publication for Ontario golf superintendents. We look forward to a long and prosperous relationship with Blenheim Ink in continuing to provide OGSA members with the professional publication they have come to expect.

TORO Count on it.

The most advanced, most durable and most flexible golf sprinkler built for today's golf courses.

Toro's DT Series Sprinklers

The Toro DT Series Sprinkler brings together over 40 years of golf irrigation knowledge with the most recent advances in technology and water management. From top to bottom, the DT Series Sprinkler is the best choice among standard golf sprinklers.

For more information Contact your Turf Care sales representative.

Turf Care Products Canada

200 PONY DRIVE, NEWMARKET, ON L3Y 7B6
PHONE (905) 836-0988 • FAX (905) 836-6442
1-800-561-8873

London
Ph: (519) 668-7664 • Fax: (519) 668-3722

Milton
Ph: 905-836-0988x7048 • Fax: (905) 636-1513

Gloucester
Ph: 905-836-0988x5501 • Fax: (613) 822-2099

One great result.
visit www.turfcare.ca

TURF CARE
Helping your business grow.

What's new

Mark Your
Calendars...



Assistants Tournament – Sept. 22nd
Braeben Golf Course

**Alex McClumpha Memorial
Tournament – Oct. 4th**
Black Bear Ridge Golf Club

**OTRF Fundraising Tournament
– Sept. 20th**
Bayview Golf & Country Club

**2010 OGSA SCHOLARSHIP
DEADLINES**

**TURFGRASS DIPLOMA/DEGREE
AWARD (\$3,184.00)**
November 15th

**TURFGRASS SHORT COURSE
AWARD (\$1,272.00)**
Awarded at end of course

HERITAGE AWARD (\$3,184.00)
August 31st

**HUGH KIRKPATRICK BURSARY
(\$3,092.00) October 31st**

CGSA ONTARIO DIRECTOR

Jim Flett, B.Sc. (Agronomy), AGS® has been named to the position of Ontario Director on the CGSA Board of Directors. Jim is the superintendent at Muskoka Lakes Golf & Country Club in Port Carling, where he has served in that capacity for 18 years. Jim has been an OGSA member since 1993 and served as OGSA President in 2002. Congratulations Jim on your new position! We look forward to working with you.

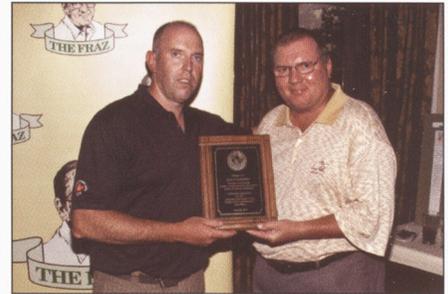
"THE FRAZ"

On June 28th the sun shone down on Credit Valley Golf and Country Club, host to the final Fraz GTA Media Day, held in memory of Toronto Star veteran golf writer Rick Fraser, known to the community as "The Fraz". Rick was a graduate with honours from what is sometimes referred to as the "Old School" of journalism. He knew his subject, knew the people, loved the sports he covered and worked his contacts with skill.

In 2000, six foursomes participated in the inaugural "The Fraz" at Thornhill Golf & Country Club. Ten years later, over 60 sports journalists participated in the event. OGSA was honoured to be invited and put in a foursome from their board.



OGSA Past Presidents, Paul Scenna and Jeff Stauffer also took part in the day. OGSA President, Jeff Alexander presented a plaque to Glenn Goodwin, President and Founder of the Greater Toronto Area Golf Association - Greens & Dreams Foundation - in grateful appreciation for his dedication and support to the men and women of the Ontario Golf Superintendents' Association.



"This year marks the "Final Fraz Day" as we return to the site where Rick played his first round of golf-the venerable Credit Valley Golf & Country Club-with his good friend Glenn Goodwin. Rick regarded Credit Valley Golf & Country Club as one of the finest courses he'd played in Canada and we know that he is looking down upon us with a smile as we play his favourite game.

Rick and Glenn always had a very high regard for the men and women of the Ontario Golf Superintendent's Association along with great sports writers like Dave Perkins who Rick spoke of frequently – so it is only fitting that the final Fraz Day is in honour of the OGSA and Perky – as The Fraz wouldn't want it any other way. Thanks for the memories..... Goody."



Welcome!

**OGSA Welcomes our
newest members**

Ron Heesen Class A
Nottawasaga Inn Resort

Charles Jarrett Class A
Bay of Quite G & CC

Sean May Class S
University of Guelph

John Plomske Class C
Springfield Golf & CC

Origo Inc. Class E
Chris Exelby



The Champions from Diamond Back

BATTER UP!

The annual Plant Products slo-pitch tournament was held on July 10th at Turner Park in Hamilton. Thirty-four teams started the day with a chance at the title, and, unlike the previous week's rainout, all were treated to some clear and sunny skies.

After the round robin, and several playoff rounds, the semi-finals pitted Diamond Back versus Mandarin, and Deer Creek versus Cutten Club. Diamond Back beat Mandarin and Deer Creek got by Cutten Club to set up a strong finals matchup. There were some great defensive plays from both teams, but it was the Diamond Back offense that led them to a 10-5 win and the championship.

Special thanks go to G.C. Duke for providing us with golf carts for the day, and to Hornby Glen for transporting them for us. This day would not be possible without the support of our sponsors: BASF,

MANA, Bayer Environmental Science, Pickseed (who sponsored the ice cream), Lebanon, Aquatrols and Par Aide.

Thank you again to all of the teams that participated. We look forward to another successful tournament next year!

Ontario Professional Turf Sales Team

South Western- Brian Bennett
(519) 421-6593

Niagara/Central- Craig McCutcheon
(905) 536-0357

GTA- Bill Martel
(416) 508-6115

Eastern Ontario- Perry Brazeau
(289) 338-1834

Northern- Kevin Jensen
(705) 627-3590

www.turfpro.ca

MAPLE TURF SUPPLY

Professional Turf Fertilizer

8112 KING RD. WEST
BOLTON, ONTARIO L7E 5T3
1-800-268-4425
1-905-857-2000
WWW.MAPLETURFSUPPLY.COM

- Cost Effective Custom Blends
- Water Soluble, Granular, Liquid & Organic Fertilizers
- Bulk Spreader Service
- Full Line of Turf Chemicals

For Further Information Call:

Simon George

Technical Sales
Central Ontario, GTA & Niagara Region
1-519-841-3378

Mark Schneider

Technical Sales
Georgian Bay, Lake Simcoe & Muskoka Region
1-519-372-5181

Rae Murray

Technical Sales
North East GTA & Eastern Ontario
1-416-819-3404

Foltec[™]
Foliars

The Andersons

Nutri DG[™]



by Doug Johnson
SAFETAID and Health
and Safety Consulting
First Aid and Safety
Supplies and WHMIS
Training

Posting Requirements in Health and Safety

One of the questions I often get from my clients is; can you tell me what I need to post in the workplace to comply with the Occupational Health and Safety Act (the Act) and other legislation? There is always a great deal of discussion concerning this so I thought it would be reasonable to try to clarify the situation.

One point of caution you should consider. You may have been approached by a private company trying to sell you a bunch of big posters. The Ministry of Labour has told us that these posters DO NOT COMPLY with the requirements of the various acts that they purport to represent. The Government of Ontario publishes approved documents and the Ministry of Labour looks for these approved documents when they come to your workplace. If you have been contacted by a private company selling posters, call 1-800-531-5551 and provide details, as these folks are not permitted to sell these products.

The Employment Standards Act, 2000, the Occupational Health and Safety Act, and the Workplace Safety and Insurance Act specify exact posting requirements. The Ontario government is committed to protecting workers' rights, and their health and safety in the workplace. To ensure that workers are aware of their rights, employers are required, by law, to post certain documents.

Here are the items that you are required to post in your workplace:

- Under the Employment Standards Act, 2000 (ESA), employers are required to display the most recent version of the Minister of Labour's poster, "What You Should Know About The Ontario Employment Standards Act", in at least one conspicuous location in the workplace.
- The poster outlines workers' rights and employers' responsibilities at work. It is available online for free and can be printed on legal-size paper for posting in the workplace. Service Ontario Publications will also provide copies of the poster, charging only for shipping and handling.
- Under the Occupational Health and Safety Act (the Act), Employers are required to post a copy of the Occupational Health and Safety Act in their workplaces.
- The act is available online for free. It is also available from Service Ontario Publications. Generally, however,

most workplaces post a copy of the Act and the regulations that apply to the workplace. This is easily done by purchasing a consolidated edition of the Act and regulations. The consolidated version is published by Carswell and is accepted by the Ministry of Labour as meeting the posting requirements.

- Every workplace is required to post a copy of their current health and safety policy. This is generally a one page statement indicating that the employer believes in a safe and healthy workplace. The document is generally printed on company letterhead sets out general statements of intent with respect to the health and safety program in the workplace. This document must be reviewed and updated at least annually.
- To ensure that the policy is implemented the employer is required to develop and maintain a health and safety program. This is a much more involved document that provides the workplace with rules and protocols that define how the health and safety policy is to be implemented in the workplace.
- Under a regulation of the Work Place Safety and Insurance Act (WSIA), employers are required to prominently display the poster entitled "In Case of Injury-1234" in their workplace. These posters are free from WSIB.
- The WHMIS regulation requires employers in workplaces with hazardous materials to identify those materials, ensure that proper Material Safety Data Sheets on the materials are readily available and containers are properly labelled, and to make sure that workers are properly trained in handling and use of the materials. In general employers post the MSDS's in an area close to where the products are stored and used.
- As of June 15, 2010 employers are required to post their Violence and Harassment policies in the workplace. If you have not done this then you are in violation of the Act. The violence and harassment legislation became law on January 1st 2010 and is now being enforced.

I hope this helps clarify some of the posting requirements. If you have any questions or concerns please contact me.

Have a great spring.

SAFETAID

Making safety your 1st priority!

T. 519-837-0997 • F. 519-837-1996

Consulting, Safety and First Aid Supplies

doug@safetaid.ca

Sweep Star V62 Sweeper/Vac



Liquid cooled engine provides quieter operation, longer life and easier maintenance.

4 plus cubic yard hopper

Electric clutch for quieter operation and easy cold starting

Powerful 18½" dia 8 blade vacuum fan



Outsweeping the competition... one field at a time

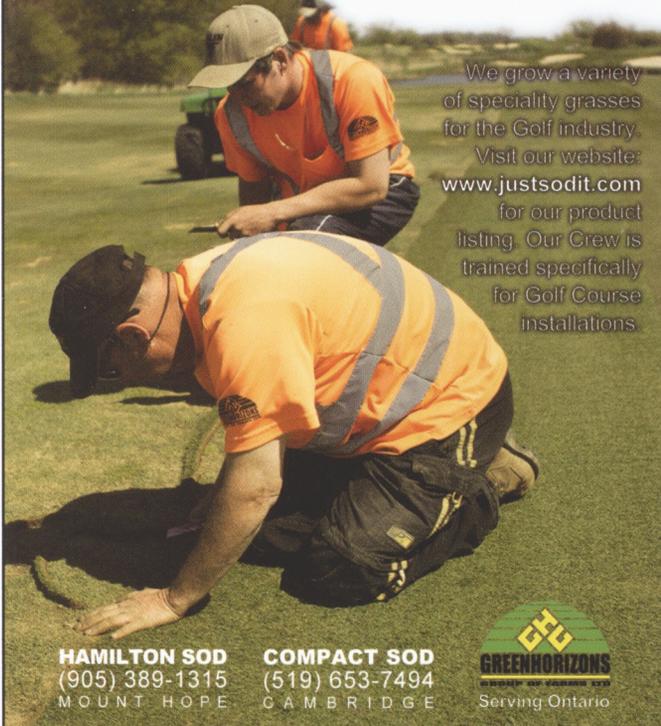


visit our WEBSITE
www.gcduke.com

1184 Plains Road East
Burlington, Ontario L7S 1W6
Burlington area: 905-637-5216
Toronto area: 905-338-2404
Toll Free: 800-883-0761
Fax: 905-637-2009

SPECIALITY SOD FOR YOUR COURSE

Delivered or Installed



We grow a variety of speciality grasses for the Golf industry. Visit our website: www.justsodit.com for our product listing. Our Crew is trained specifically for Golf Course installations.

HAMILTON SOD
(905) 389-1315
MOUNT HOPE

COMPACT SOD
(519) 653-7494
CAMBRIDGE



Some things just work.



Solving the problem of disease control.

Protect your turf from dollar spot, brown patch and anthracnose with Rhapsody fungicide. With three modes of action, Rhapsody harnesses the power of biochemistry in a way that sets it apart from other fungicides, protecting your turf from diseases, and increasing turf quality, while reducing the need for synthetic chemicals.



For more information see your turf input supplier or log on to www.uap.ca for full label information.

West: 1-800-561-5444 Ontario & Maritimes: 1-800-265-5444
Quebec: 1-800-361-9369 BC: 1-604-534-8815



© Rhapsody is a registered trademark of AgraQuest, Inc. 10009 01.10

From roots to shoots



by Pam Charbonneau
OMAF Turfgrass Specialist

Lessons learned from the Winter of 2009/2010

This spring in the heat of the moment, when winter injury was about the only thing that golf course superintendents were talking about, I agreed to try to summarize what I had seen out in the field and heard from the field regarding what worked and what didn't with respect to winter protective covers, ice cover, ice removal, etc. There are two problems with this scenario. The first is that it is 30°C and feels like 37°C at the moment and the second is that it is hard to remember back to last spring. But a promise is a promise.

Let me begin by reminding you that between Dec. 25th and 26th, 2009, roughly 25mm of rain fell in most areas of southwestern Ontario. This was followed by a flash freeze that left behind a thick layer of ice everywhere. There was what superintendents are calling a swath of destruction that followed the 401 corridor across southwestern Ontario. At this point the clock was ticking for most superintendents and the count down began. Throughout January, snow fell and covered the ice with a thick covering of snow. By the end of January, there was a thaw that was followed by a 24°C drop in temperature just before February 1st. Most superintendents jumped into action and began their proactive steps to try to prevent winter injury around this time. The actions varied. Some did nothing, most removed snow. Some only removed snow and made no attempt to break up the ice. Some removed snow and tried melting or honeycombing the ice with black sand. Some also tried using various aerator tines and many chose bayonet tines which gave the best results after trying and breaking many other types of tines. What was consistent however was that anyone who disrupted the ice layer or removed a cover at this point already smelt the "smell of death" associated with the accumulation of volatile fatty acids associated with anoxia.

Doing Nothing

I truly didn't talk to anyone who did nothing. What did happen though was that some superintendents made choices of which greens to attempt to remove snow from because, for one reason or another, they could not remove snow from all their greens. The results were mixed. On one course, there were two greens where they did nothing. One of the greens had the least damage and the other green had the most damage. Go figure.

Snow Removal

There was an interesting situation on one golf course where the superintendent started removing snow the first week of February. They did not have the resources (people) to remove the ice layer. They were only able to get to 16 of the 18 greens to remove the snow. In fact, on those two greens the snow was so hard that they were unable to remove it. What do you think the outcome was? The greens that had the snow removed but not the ice were 80% damaged. The greens that they were not able to remove the snow from, looked the best. Did the lack of snow and insulation contribute to the death of the turf? Did the snow that was removed melt back on to the turf and cause crown hydration injury in the spring? I think one thing is consistent with those that did shovel snow. It is not just enough to remove the snow, you need to insure that the snow does not melt and dam up covering the green with water that can then freeze and thaw and cause crown hydration injury.

Snow Removal and Black Sand

Many superintendents removed snow and tried to melt the ice using black sand. This was probably a good approach, but many superintendents that I spoke with admitted that they did not have enough sand to really have any impact on the thick ice layer they were trying to tackle. The results of this action were not favourable. Many of these greens were damaged. It is not clear whether the damage was from freeze thaw cycles in the late winter/early spring or from anoxia. Some of them did have cracks in the ice and green grass under the ice cracks signaling that the damage was caused by anoxia. Did the removal of the snow lead to exposure of the turf to lethal cold temperatures? So many questions and I am not sure of the answers.

Snow Removal and Bayonet Tines

The superintendents who I spoke with that removed snow and physically disrupted the ice layer by aerating with bayonet tines had pretty good results. They felt that the turf on the greens where the ice that had been fractured did better than greens that had not been aerated. They also reported that when they started aerating the greens they had that rotten odour that we now know is a result of low oxygen and a build up of volatile fatty acids.

Permeable Covers

I only spoke with a few superintendents who used permeable covers. They reported that their greens looked fine when the covers were first removed in the beginning of March, but then they began going downhill and they ended up with damage by the end of March. I am actually not to clear on the role of permeable covers in Ontario. They seem to work well in areas such as Manitoba, Minnesota and North Dakota where they lose snow cover and turf suffers from winter desiccation.

Vented Covers

Some courses in Ontario are experimenting with a system of covers that has been quite successful in Quebec for preventing winter injury on golf greens there. It consists of a permeable cover, some sort of venting topped off with an impermeable cover. This system worked really well, except in one or two situations where a green was located at the bottom of a large slope and the rain that fell around Boxing Day actually got under the covers and froze there causing anoxia damage.

Conclusions (if any)

After many conversations with superintendents and visits to golf courses in the spring, I am left with very few real conclusions.

Winter injury is extremely complex and involves many, many variables and in spite of much good research, there is still so much we don't know. Every golf course has different challenges when it comes to preventing winter injury. Even greens within the same course may have different challenges. So much depends on the weather, the grass species, the rootzone composition, organic matter accumulation, hardening off, size of the green (effects overall wear and turf health), overall traffic (number of rounds), shade, cultural practices (fertility, mowing height, core aeration, irrigation), to name just a few.

Where protection from winter injury is concerned, there is definitely not one magic bullet either. A big part of the solution is knowing your golf course, knowing the weak greens that are composed mostly of *Poa annua*, that are shaded, that have thatch accumulation and poorly drained heavy soils. These greens could probably benefit from a permeable cover directly over the greens, a venting method and an impermeable cover over top. This system insures that the main enemies of turf in the winter (water and ice) do not get a chance to come in contact with the green. This is an expensive solution and not one that is feasible for every golf course.

Removing snow and ice is an art unto itself. Knowing at what point in the winter to do it is essential, but that depends on the duration of ice cover and it is also

impacted by the weather after ice and snow removal, which is completely unknown. Also, removing the snow alone and leaving the ice, or not completely removing the ice does not seem to be a good idea based on what happened last winter. Removing the snow far enough off the greens so that it does not melt back on to the greens is also crucial. Anyone who had the snow melting and puddling back on the greens lost turf, especially in the low lying areas on a green. A thick ice cover like the one we had last winter needed more than a light dusting of black sand to break up the ice. Bayonet tines seemed to be needed in most areas to penetrate the ice layer. The courses that were able to do this seem to fair better than those that only used the black sand.

A couple of turf managers are weighing in on this subject in this issue and I hope that they have more definitive answers to the age old question of winter survival of golf greens in Ontario. Another one of my ideas is to have a forum with several superintendents at a conference next winter to see if there are any conclusions to be drawn when we all put our two cents worth in.



Figure 1. This photo shows the range in damage that occurred on greens height turf at the Guelph Turfgrass Institute showing plugs that appeared to be damaged and had 100% re-growth to plugs with no re-growth at all.

ARE YOU READY FOR WINTER?

by Matthew Legg, Assistant Superintendent

Weston Golf & Country Club

Weston Golf Course is a Willie Park design with relatively flat greens surfaces with little to no surface drainage. As an old property, Weston surfaces are predominantly Poa Annua based and are grown on a loamy medium that has been modified through decades of topdressing and management.

Preparing for winter:

1. 100% of greens have been internally slit drained to help provide an avenue for excess moisture to move off the surface and away from the plant. Last season, our final four surfaces were completed.
2. Internal drainage is not enough on its own – to help remove excessive moisture away from the plant, we implemented the use of our verti-drain, along with an additional 1" verti-drain and dry sand backfill on historically wet and damaged sites. Last season saw a relatively mild fall which allowed for 3-4 surfaces to be treated with this 1" 'drill and fill' procedure.
3. Tarping is also an important step of this preparation process – only two of our green sites did not receive tarping going in to the winter. Dependant on the site needs some received perforated tarps while others received solids or a combination of both.
4. Multiple data loggers tracking external as well as internal temperatures were used to better monitor conditions above and below the tarps, so that preventative measures could be taken if needed.
5. This past winter saw little snow cover and some ice accumulation followed by melting. A single venting process of the solid tarped surfaces was done in mid-late winter to possibly help with gas exchange on the greens surfaces and introduce some oxygen. The use of a tractor blower along with a self made piping system allowed for air to be blown under the tarped surfaces at a productive rate.

Results

In spring 2010, only one green surface came out with damage and this was seen in a bowled area on a non-tarped green. We can pinpoint this damage to the days at the end of December, when a formed ice layer melted and possibly re-froze on the green surface. Needless to say, a solid tarp may have prevented this damage.

Learnings

What worked last season isn't guaranteed to work again next season! Every year is different and requires different care and modification of techniques. The key is to be flexible and constantly observant. Below are some of our learnings:

1. The use of white opaque tarps is a must as logger temperatures showed little fluctuation in green surface temperatures under these tarps.
2. The use of data loggers allowed us to better monitor what is really going on and to hopefully be a step ahead of Mother Nature.
3. Clear solid tarps prove to be high maintenance during the winter with little snow cover as temperatures at green surfaces rose dramatically when exposed to sun (a green house effect was seen using these tarps).
4. Perforated tarps also worked but great care must be taken to make sure these are used only in appropriate sites with proper surface drainage.
5. A bubble tarp experiment under the 5th green proved to moderate temperatures most effectively. Whether the benefits of using this product outweigh the processes of installation, removal and storage is still up for debate.



5th Green



5th Green - Temperature Probe

WINTER PREPARATION IN THE NORTH

By Jeff Alexander, Superintendent

Parry Sound Golf & Country Club

Preparing your golf course for the long harsh winters of Ontario can be a daunting task. As a golf course superintendent for 15 seasons at Parry Sound Golf and Country Club I learned very quickly to adapt to quick rapid weather changes. One solid piece of advice is knowing your climate in your region. Document weather patterns each and every year for historical data information. I know for a fact that my earliest snow fall that stayed for the entire winter came on November 4th, 1999. My rule of thumb since that time is to make sure I have that date in the back of my mind for a guide line.

Winter prep is a season long job. We all work hard to keep healthy turf all season so that when we start our fall programs we have a good base. September is just as busy as August so maintenance programs do not start until last week of September into October. I work with an Agronomist who was hired in 1996. He has had a big impact on my fertility and maintenance programs. Agronomists are not for everyone, but if you do hire one make sure you communicate your property and needs to maintain it. Come up with a plan that suites your property and budget. Make sure you stick to the plan of action and if there is no result, the plan of action must be revised.

Greens:

- Vertical mow – three to four times a year, none in October.
- Topdressing – light frequent, all season and heavier in fall.
- Venting – Bullet tining every three weeks until October.
- Solid tine – ½” solid tine, first week October, fill with sand.
- Verti-drain – ½”solid tine at 8inch depth, tight spacing, third week October, no topdressing and helps surface drainage.
- Preventative spray for winter before November 4th. Know your product for best application.
- No dormant fertility application because of extended snow cover and no frost.
- Do not use covers because of extended snow cover.
- Remove snow mid March to speed thawing process.
- Heights do not vary from season to season.

Tees:

- Vertical mow – twice a year.
- Topdressing – twice a year moderate, none in October.
- Open tine – ½” open tine twice to three times a year.
- Verti-drain selected tees in October - ½”solid tine at 4 to 6 inch depth.
- Preventative pest control product spray for winter before November 4th.
- Dormant fertility - .500/1000sq/ft.
- Heights do not vary from spring to fall.

Maintenance practices are important throughout the year and getting these task completed can become more of a problem if not properly scheduled and planned. Year round planning for the betterment of the turf is a must to be successful for winter preparation. Make sure there is minimal turf damage late in the year and perform tasks during proper weather conditions to get ultimate results. Sometimes earlier is better and having Mother Nature on your side!

Collars/Approaches

- Vertical mow – twice a year.
- Open tine – ½” open tine twice to three times a year.
- Topdressing – once a year.
- Preventative pest control product spray for winter before November 4th.
- Heights do not vary from spring to fall.

Fairways:

- Vertical mow – twice a year.
- Deep vertical mow – May and September.
- Bannerman BA-Ject slicer – October.
- Topdressing – once a year (just starting 2010).
- Preventative pest control product spray for winter before November 4th.
- Dormant fertility - .500/1000sq/ft.
- Heights do not vary from spring to fall.

Rough:

- Vertical mow selected areas in spring.
- Bannerman BA-Ject slicer – October.
- Dormant fertility - .500/1000sq/ft.
- Heights do not vary spring to fall, but keep areas mowed tight into the winter.

Above the hole

by Sean May
Student and Intern

An intern is a position that has emphasis put towards hands on training and linking knowledge that was learned in school. Late April quickly rolled around and it was time for me to pack up my things and move to Bigwin Island for the summer. From day one living and working on an island has been an unbelievable experience. The ability to wake up and be right at work and being surrounded by water is a feeling like no other.

As an intern I was quickly able to get the hands on learning and link it with the knowledge that was gained in my first year at the University of Guelph. My goals that I set out in the beginning began to be met. I have been able to experience many cultural practices first hand such as aerating, spiking, topdressing, over seeding and verti cutting, even completing some of these practices late into the night. I have also been taking part in irrigation and drainage repairs. Fertilizing and hand watering as well as equipment operation are some of the more routine tasks on a day to day basis.

Since I started I was given the opportunity to take daily weather records as well as soil temperatures on certain greens. In late April and May the weather began to show as if we were going to be in for a droughty summer and would have to irrigate and hand water frequently. Then June



rolled around and we started to get an inch of rain every other day and it started to look like a repeat of the following last two seasons. Of late it has started to heat up and the dry weather looks like its here to stay. It means we will have to call on our irrigation system to keep the course going and keep on top of hand watering hot spots.

Living on the course itself has definitely allowed me to fully engage myself in the internship experience. I am glad for the opportunity I have been given here to learn the hands on aspect but also to improve my knowledge to why certain tasks are being completed. Talking with many other students from school they seem to be getting the same great experiences as well. I look forward to finishing my internship off and returning to Guelph in the fall to apply what I learned this summer.

Best Of Both Worlds

Nutrite's 33-0-0, 40% UMAXX® 35% Ammonium Sulphate is...



Beneficial for the turf

- 40% UMAXX® stabilized nitrogen
- Earlier spring green-up
- Improved fall and spring root growth
- Enhanced storage of carbohydrates within the turf plant
- Cost effective product for your dormant fertilizer application!

Environmentally responsible

- UMAXX® reduces nitrogen loss by up to 30%
- UMAXX® stabilized nitrogen reduces nitrogen volatility loss for up to 14 days
- Nitrification inhibitor reduces nitrogen loss to leaching
- Utilizes natural soil chemistry to extend nitrogen availability



1-800-265-8865

www.nutriteturf.ca



Bayer Environmental Science

Don't let the stunning fall colours distract you.
Pink and Grey are on the way.

Rovral[®] Green GT

FUNGICIDE

When the only colour you want to see is green.
(fall colours exempt)

When fall roles around, Rovral Green GT is the choice to prevent pink and grey snow mould.

Stop the damage on your greens, tees and fairways caused by Fusarium, pink snow mould and grey snow mould. Use Rovral Green GT from Bayer Environmental Sciences. The proven fungicide that has become the cornerstone in disease management programs across the country.

For more information contact Bayer Environmental Science
www.bayeres.ca 1-888-283-6847

Quebec: 514-949-2467 Ontario/Western Canada: 905-319-8981 Ontario/Atlantic Canada: 519-239-3983
ALWAYS READ AND FOLLOW LABEL INSTRUCTIONS. Rovral Green GT is a registered trademark of Bayer.

BACKED
by **BAYER**[™]

Member profile

Interview with Paul White, MS, AGS, Superintendent The Briars Golf Club

by Paul Grotier, Assistant Superintendent
Donalda Club

When asked if he would be interested in being the latest member profile for *Green is Beautiful*, Paul White simply said, **“It would be an honour.”** Pretty modest answer from a superintendent who has had as long and illustrious a career as he has had. A common theme throughout our conversation I noticed was how important family is to him. Not surprisingly then, it was his father who helped him get his start in the golf business.

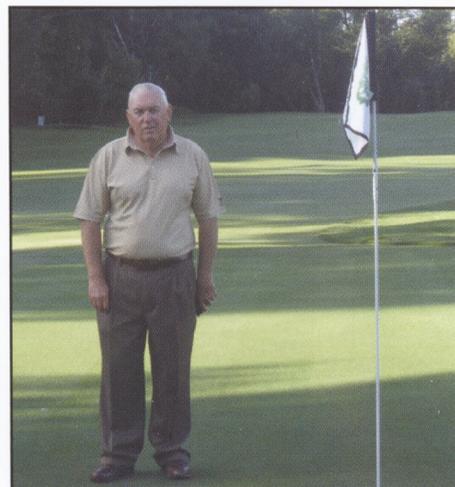
His father, who was a contractor, was excavating an irrigation pond at St. Georges Golf Club in 1960, the year the club hosted the Canadian Open. Curious if there would be any work available for his fourteen year old son, he asked then Superintendent, Bruce Woolly if there would be an opportunity for Paul to work with the grounds crew the week of the Open. It could not have been a more convenient workplace for Paul as his family lived in Etobicoke at Islington and Dundas. Hired to pick up garbage, fortune smiled upon him as a storm that washed out most of the bunkers relieved him of his sanitation duties and got him promoted to bunker duty. Paul recalls, **“I was paid \$1.10 an hour and worked 70 hours that week. I got enough money to buy gas for my boat for the entire summer!”** As a student, summers were spent on the golf course and he credits Mr. Woolly as the person who influenced his career and gave him guidance when it came time to decide which turf school to choose. **“I was accepted at three out of the four schools that I applied to and Bruce recommended that I attend The Stockbridge School of Agriculture at the University of Massachusetts.”**

Upon graduation, he was reunited with Bruce Woolly who had moved on to build Markland Wood Golf Club. As his assistant, it didn't take too long before Paul was offered his first superintendent's position. A few months into his assistant's job, Kanawaki Golf Club, located in Quebec, came calling. Apparently, he had been referred to Kanawaki by a colleague of his that he had met during his university tenure. **“I was cutting the third green at Markland when Bruce approached me and asked if I had applied for a job at Kanawaki. Surprised and confused I answered no”.** Bags packed, Paul and his wife moved to Chateaugay, Quebec. The golf club, which is built on a First Nations Reserve and employs Native Americans to maintain the golf course had its set of challenges. **“I'm from the old school, said Paul. I'm used to being hands on. I still walk cut or triplex mow greens. At Kanawaki, my job was to supervise. I wasn't allowed to take any job away from staff. Dealing with staff was sometimes tumultuous.”** If that weren't enough, his time in Quebec also coincided with the October Crisis in 1970 in which the War Measures act was enacted following the kidnapping and eventual murder of a government official by the Front de Liberation du Quebec (FLQ). **“They were scary times and it was clearly time to come home”.**

A club director from Glendale Golf and Country Club, who was a CFL referee at the time, happened to play Kanawaki and was impressed with what he saw during his round. Through this connection, Paul then became the superintendent at Glendale. It seems like his experience at Glendale was somewhat similar to the expression “out of the fire and into the frying pan” as Paul described his time there as “busy”. Apparently, many evenings were spent on his stomach, reaching into holes fixing components from an antiquated irrigation system made from aluminum piping.

From Glendale, Paul moved on to be superintendent at the following courses: Lambton Golf and Country Club, Glen Abbey, Mississauga Golf Club and finally to his present position at the Briars in Jackson's Point. He credits his acumen in apparel for helping him secure the job at Lambton. **“It seems like the competition was close that it came down to how I dressed for the interviews”.** At Glen Abbey, his two year stint flew by. **“Hosting the Canadian Open is a lot of fun. The Open is a circus and I like circuses!”** said Paul. **“I got to meet Jack Nicklaus and during tournament week I was invited to eat in the pro's dining room atop the clubhouse!”**

When the job at Mississauga Golf & Country Club became available, it was hard to resist. **“I got that job on my birthday”**, said Paul. Paul, who has four children, kept family close at hand to help out on the golf course during his stay at Mississauga. His three sons, James, Peter, Scott and daughter Melissa all worked on the grounds crew at Mississauga and clearly he passed down his



passion for golf to them. The three boys have gone on to have careers in turf management.

Now at the Briars, Paul seems content with his achievements on the golf course. He has helped raise both the status of club and course conditioning standards. Recently, the Club has put in place a succession plan and hired an assistant with the aim that he will replace Paul when he retires.

When looking at Paul's career as a superintendent, one might get the sense that he barely stayed in one place long enough to lay roots but in actual fact, he was following the career advice given to him while at Kanawaki. **"My General Manager told me to never stay at one club longer than seven years. In seven years, the board that hired you has changed and the new board does not remember the condition the course was in when you started, so they do not appreciate your accomplishments"**.

Paul also served as President of both the OGSA and CGSA in 1980 and 1992, respectively. He states the importance of being active at the association level is that one must give back service to the profession that has provided him and his family so much. **"Everybody has to give their fair share"** he answers when asked why he got involved with the CGSA and OGSA.

Throughout the interview, Paul was more than generous with his time and I was amazed with the breadth and scope of his experience in our industry. It is clear to me that he has been a leader in golf course management and to accomplish half of what he has accomplished can easily be called a successful career.

"In the Hot Seat"

- | | |
|--------------------------------------|--|
| • Favourite major: | The Masters |
| • Best piece of turf equipment ever: | Two answers 1. slot seeder 2. Salsco Roller |
| • Favourite golf designer: | Ian Andrews and Robbie Robinson |
| • Ultimate foursome: | Must be sixsome with Helen, Peter, James, Scott & Melissa |
| • Lowest round ever and where: | 82 with Bill Fach, Paulino Scenna and Hugh Kirkpatrick at a State Park public course in North Carolina on the way to Pinehurst |
| • Favourite movie: | The Greatest Game Ever Played (filmed at Kanawaki) |
| • Favourite meal: | Wife's pasta |
| • What's in your CD right now: | One Stormy Night by Mystic Moods Orchestra |
| • Rate your lawn on a scale of 1-10: | 4 out of 10 |



Master's
Turf Supply Ltd.

EarthWorks™
Natural Organic Products

Everett Nieuwkoop started Master's Turf Supply Ltd in 2002 with a vision of a back to basics company. He wanted to create a company that would put the concerns and needs of the turf industry first and foremost, not a faceless corporation whose only concern is profit for their shareholders.

Master's Turf Supply Ltd has changed with the times and the needs and demands of its customers. We are in constant pursuit of excellence by using conventional & alternative products based on the latest technology. Our new product lines of Earthworks an organic based fertilizer and Plant Food an excellent liquid and foliar line, will add to the many great products already available at Master's Turf.

Our sales staff is trained to provide each customer with the knowledge and expertise required when selling our products. We welcome Brad Walker to our sales staff for the central region of Ontario. Brad has 10 years of experience as a superintendent at Wild Winds Golf Course in Rockwood.

We will continue to expand and improve our product line in order to provide the turf industry with even more quality products and the best service.

P.O. Box 277, 890 Fairground Road, Langton, On, NOE 1G0 • T: (519) 875-4094 • F: (519) 875-4095 • mastersturfsupply.com • mastersturf@hughes.net

PRESIDENT'S DAY

Brampton Golf Club and Course Superintendent, Marty Kopp hosted a wonderful day out for golf club Presidents, Greens Chairs and fellow Superintendents.

Despite receiving 2.5 inches of rain the day previous, the course was in remarkable shape and posed a challenge for

everyone. The 4 person team progressive Net Best Ball format allowed all teams to stay competitive. However, in the end it was Orr Lake that was the best by a wide margin.

Thanks to all who participated in this year's event and we hope to see you next year.



Allan Johnstone, Paul Bouzís, Mike Shean Jason Harris, with OGSA President, Jeff Alexander



Martin Kopp being presented the Host Superintendent plaque

PRO/SUPER CHALLENGE

Otter Creek Golf Club hosted the annual Pro Super Challenge on Thursday June 10th, 2010. Past President and Superintendent, Randy Booker most certainly had the golf club dialed-in as many competitors were tested early and often. The finishing touches were ongoing around the clubhouse and parking lot and add instant appeal to an

already beautiful golf property. The superintendents and professionals were treated to great weather, a great game of golf and a wonderful meal. Many thanks go out to the Otter Creek clubhouse staff and maintenance crew, who did a wonderful job!



*1st Place Team CobbleBeach Golf Links
Jeff Thomas, Assistant Supt. and Warren Thomas, Golf Pro*



Randy Booker accepts the Host Superintendent plaque presented by OGSA Director, Phil Scully

Golf course highlight

Otter Creek Golf Club

275 James Street
 Otterville ON N0J 1R0
 Phone: (519) 879-9800
 Email: rbooker@ottercreekgolfclub.com
 Website: www.ottercreekgolfclub.com
 Golf Course Superintendent: Randy Booker



Photo by Dorothy Hills

COURSE PROFILE

What county is your club located in?
 Oxford County

Is your club private, semi private, public, resort or municipal?
 Public

Typical number of rounds
 19,000 rounds during 1st year of operation

Typical opening and closing dates?
 late March open
 with late November closing

How long have you been a superintendent?
 17 years

How long have you been an OGSA member?
 17 years

List other accomplishments
 Past President of OGSA

How many staff?
 2 year round, 17 seasonal staff

How many assistants and mechanics?
 Assistant: Kevin McIntosh

COURSE STATISTICS

How many holes?
 18

What is the yardage from back and forward tees?
 7,124 yards from the back tees and
 4,785 yards from the front tees

What is the size of driving range and range tee?
 10 acres, 360 yards long
 39,000 square feet bentgrass tee
 2 putting greens
 chipping green with fairway and bunker

How many bunkers?
 84 maintained, 3 waste

How many times does water come into play?
 2 ponds and 2 creeks (Spittler and Otter) come
 into play on 4 holes

Who was the original architect?
 Dick Kirkpatrick

What was the year of original construction?
 2007

What is the size of your maintenance shop?
 20 feet x 150 feet
 2,500 square feet heated

What type of irrigation system?
 Toro Osmac
 1500 GPM pump station

What is the size of greens, tees & fairways?
 3 acres of greens
 2.5 acres of tees
 30 acres of fairways

What is your predominant grass?
 Bentgrass

Type of greens?
 21 onsite 100% sand amended with turkey
 compost for grow in.

What is the predominant soil type?
 300 acres of pure sand

What equipment do you have in inventory?
 6 Jacobsen Eclipse walk mowers & trailers
 2 Jacobsen Gplex diesel triplex
 1 Jacobsen Gplex gas triplex
 2 Jacobsen LF3400 fairway mowers
 2 Jacobsen AR3 rough mowers
 1 Jacobsen 628D Turfcats deck mower
 4 John Deere 21" rotary mowers
 5 Hoover mowers
 2 John Deere string trimmers
 2 Stihl backpack blowers
 1 Stihl hand held blower
 2 Smithco Superstar bunker rakes
 5 E-Z-GO utility carts
 2 Cushman turf trucksters
 1 Cushman DS 300 sprayer
 1 utility 45 gal sprayer
 1 Planet-aire aerator
 1 Greensaire aerator
 1 7120 Vertidrain
 1 Lely fertilizer spreader
 2 Andersons SR2000 fertilizer spreaders
 2 Lesco fertilizer spreaders
 1 Lesco drop seeder
 1 Buffalo turbine blower
 1 giant Vac push blower

1 Jacobsen B40 tractor blower
 1 Tru-turf greens roller
 1 Turfco 1530 widispin topdresser
 1 Turfco CR10 material handler
 1 JCB loader with forks
 1 Viking
 2 utility trailers

LONG RANGE PLANS

What long range plans for renovation do you
 have in the next five years?
 Cart path extensions and paving

CHALLENGES

Are there any particular challenges you face
 with your property?
 Water and Fertility – being pure sand with
 less than .5% organic content for the most
 part. Water holding and fertility programs
 are one of the obstacles that we deal with.
 Very dry and firm conditions are great for
 the golfers with little disease pressure but
 our turf requires daily watering and routine
 fertilizer applications.

SUCCESS STORIES

Do you have any success stories?
 Construction of the golf course began in the
 winter of 2007 with seeding beginning in
 August 2007. All non bentgrass areas were
 hydro seeded with no sod laid during the
 process. Bentgrass seeding began after
 Labour Day and was completed by the 3rd
 week in October. Fairways were mowed
 with 21" rotary mowers until the ground had
 enough cover to support fixed head walkers,
 lightweight triplex mowers were introduced
 once the turf surface had complete cover
 and was firm enough to support the cutting
 units without plowing the sand. The front 9
 holes were ready and opened for play May
 28th of 2008 with the full 18 open prior to
 July 1st. From seeding to opening was a
 mere 7 months of which 3 had snow cover.

From Tornado to Thank You!

by Michael Toth, Superintendent
Erie Shores Golf & Country Club

We all really know there never truly is a day off from the golf course. Whether it is as simple as worrying about what is happening in your absence or planning the upcoming weeks ahead, there is always something to do. Then there are circumstances like I experienced on June 6th, 2010. If you have ever woken up to numerous messages on your phone, you know the feeling.

Official reports indicated that an F2 tornado touched down at 3:00 am in Leamington, Ontario and parts of neighbouring Kingsville and Harrow. When I began listening to the messages that Sunday morning, my “day off” suddenly turned into a nightmare. Essex County is not really a hot bed for tornado activity, so my assumptions were that we had a smaller scale tornado hit the course similar to one I had experienced as the assistant at Essex Golf and Country Club. Upon contact with my assistant, his description of the damage was nothing like that experience at Essex. “**The trees are gone on #4!**” , “**The trees are gone on #5!**” , “Part of

the maintenance is gone!” were his remarks. That was not a good morning wake up call. Once the momentary shock and anger subsided, I asked him how the greens, tees, fairways and other buildings fared. With only minor damage to three greens and only two tees’ with trees on top of them, along with no other building or fairway damage, I knew it could have been much worse.



Hole # 4



Hole # 5

I travel about 75 km’s one way to work. When I jumped in the truck, I immediately turned on AM800 for the news. They were conducting interviews with people from the Leamington area. The second person I heard being interviewed stated that Erie Shores Golf and Country Club was hit really bad. Well needless to say that triggered even more panic and anticipation of the destruction I was going to see upon arrival. As I arrived into Leamington from Windsor, the traffic was severely backed up. My normal route down Seaclyffe Drive was completely blocked off. The reports on the radio

kept stating that the park by the lake was completely destroyed, that there is nothing left of it. They also said that the marina was demolished and Seacliffe Drive along the lakefront is a disaster. They issued a state of emergency for the town. As I arrived near our course the traffic was very slow. Five hydro poles on our street were snapped in half, with their wires lying on the ground. I saw two pay loaders driving down another street earlier and I realized later that there were so many trees across the roads that the township and high way workers were cutting them at the shoulder and using the loader to clear the roadway.



When I arrived at the course I was shocked. Our driveway was totally inaccessible. I could only partially see the roof of one of our maintenance buildings, with a quarter of it being covered by fallen trees. There are a variety of trees on the course, but they mainly consist of mature silver maples that were planted about 40 years ago, after an elm disease invasion, to quickly repopulate the loss of trees. Trees were scattered everywhere around our maintenance buildings. Holes #5, #6, #16 and #17



had the heaviest damage with many trees snapped in half. In total we lost 98 entire trees, another 35 with heavy limb damage, plus more smaller limb damage. After touring and assessing the damage, our next step was to make a plan to begin restoring the course. We are a smaller budget semi-private golf club with about 200 members. Our membership is very much volunteer-oriented throughout the season with them taking care of the gardens, fairway divots, our large bird population



and some clubhouse maintenance. So we knew we would have a good turnout of member volunteers. My crew at the time consisted of 5 full time workers and 3 part time workers, who suddenly became full time workers that week. I realized that we may have enough people to do the work but lack of equipment was the big dilemma. Like most courses in the area, we are enduring the downturn in the economy and feeling its effects. As I said earlier, our budget is on the smaller side and expenditure for renting equipment and paying for tree service companies was not an option at that time.

...continued on page 22



#17 Tee

Thankfully, we have a great association in Essex and Chatham-Kent County called K.E.G.S., the Kent Essex Greenkeeper's Society. My first contacts were Steve Hatch, Superintendent at Seven Lakes Golf Course and Gary Schultz of M.G.S., our local supplier, who organize the association. I told them what happened and asked them to e-mail all members asking to donate any equipment and any certified chainsaw operators they could send. I also contacted our equipment suppliers Turf Care, John Deere and Hyde Park asking them if it would be possible for them to deliver any equipment that could be donated. I told our club president, who took a weeks vacation to assist in the organization and clean-up process, that you will be surprised by the response we get from the golf course community. Well, even I was surprised by the



#16 Tee

response. In total, nine out of 24 golf courses in Essex County contributed to the restoration. From them 2 tractors, 3 super-tilt trailers, 1 front-end loader, 1 chipper and 5 chainsaws were donated for the entire week. Our equipment suppliers also donated 2 tractors, 1 trailer and 3 work vehicles along with their delivery service. Amongst the golf courses that helped, 190 hours of labour was given. Some came after their shift was done at their course, and 6 courses actually paid for their labour to help our course that week. For this I thank the superintendents and owners/presidents very much. On average we had 65 people per day working towards getting the course back open. Our original estimates were to have the back nine open for play on the Friday or Saturday of that week and the front nine open for the following Tuesday or Wednesday. As the club president and I saw the progress each day at the beginning of the week, we knew we were to open sooner than we had assumed. On the Tuesday of that week, we were given a burn permit by the Leamington Fire Department and began to burn brush. In estimations we hauled 500 loads of brush to burn in three days. In total, we probably took away 1000 loads of logs and brush from the golf course. As we all know with any major work project, there is a risk of injury. This was my biggest concern. On the Thursday of that week we had 80 people on the property. I knew if we had a major injury during this time that the Ministry of Labour would possibly halt all work and impede our progress to reopen. My message to everyone was to keep calm, do not rush and it doesn't matter if we open a day



Hole #16

later or sooner. Thankfully, no one was injured.

To everyone's surprise we were able to reopen all eighteen holes privately to the members on that Friday evening at 6:00 pm and open for the public the next day. It was astounding to witness how a community pulls together in a time of need and especially how other golf courses were willing to help their competition. It truly shows how great the golf course community really is and the brotherhood that exists within.

Special thanks goes out to Kingsville Golf and Country Club, Seven Lakes Golf and Country Club, Essex Golf and Country Club, Beach Grove Golf and Country Club, Talbot Trail Golf and Country Club, Sutton Creek Golf and Country Club, Belleview Golf and Country Club, Tilbury Golf and Country Club and Fox Glen Golf and Country Club. Also thank you to Turf Care, John Deere and Hyde Park Equipment. Without their support Erie Shores Golf and Country Club would have been in a dire situation and our staff, our membership and myself greatly appreciate all that was given. Thank you!



Hole #4

Braemar Building Systems



• CUSTOM DESIGN • QUALITY BUILDINGS • COMPETITIVE PRICES •



- Maintenance Buildings • Storage Facilities
- New Buildings • Wood & Steel Structures

For your **FREE ESTIMATES** call us at **1-800-215-1996**
www.braemarbuildings.com

THE ART OF WATERING BY ET - VOLUME VS. MINUTES

By Darryl James - Certified Golf Irrigation Designer
Certified Golf Irrigation Auditor, Arborturf Solutions
www.arborturfsolutions.com • darryl@arborturfsolutions.com

This might sound familiar: It's late July and you're amongst a drought. You've soil probed and you've used the general plant's appearance and decided not to water greens that night, only to come in the next day and realize that the turf still requires additional irrigation. If this has happened to you, using evapotranspiration data will help establish depletion points of your available water to help make better decisions.

But before I begin, let me get something straight. I'm a firm believer in the "Art of Greenkeeping". Nothing can replace the local knowledge and feel a superintendent has for his or her property. Evapotranspiration data is yet another tool in a superintendent's tool box to better predict when he/she should irrigate.

With that in mind, there are four critical components that need to be addressed before you get started. They include:

- Soil-plant relationships
- Sprinkler uniformity
- Precipitation rates
- Reference Evapotranspiration (ET) Data

First and foremost, the predominant soil texture must be identified on all greens, tees, fairways, and roughs. This is the basis for the soil-plant relationship. Each soil type has its own measure of Available Water (AW - inch. per inch of soil), and when multiplied by the Average Root Zone depth (RZ - inches) per area, the Plant Available Water (PAW) can be determined. But remember, root zone depth will change depending whether it's spring, summer or fall therefore, so will the PAW. An acceptable allowable depletion point for the calculated PAW ranges between 40-60%.

$$\text{Plant Available Water (PAW)} = \text{Available Water (AW)} \\ \times \text{Root Zone Depth (RZ)}$$

On a more practical level, due to the different soil types throughout the property, some superintendents prefer watching ET loss, scheduling their irrigation normally, and then evaluating their decisions based on data and their irrigation timing. For either method you use, the goal remains the same: establishing a depletion point

from the PAW.

Second, sprinkler head uniformity ensures a uniform application of water over each area. If there are nozzle, spacing, and pressure inconsistencies, overall uniformity will be compromised - leading to some areas being over-watered and others under-watered. In 99% of irrigation audits I've performed, dry areas were related to the lowest catch-can water volumes, and mechanical damage was related to the highest water volumes. Therefore, regular maintenance, along with efficiency audits, ensures your irrigation system is distributing water uniformly. If you've mastered using ET and watering by volume, but poorly distribute the water, you're missing a big piece of the puzzle. Jeff Stauffer, Superintendent at Credit Valley Golf and Country Club, has been conducting his own irrigation audits for years, which has impacted his wetting agent use throughout the golf course. Notably, he has eliminated the use of wetting agents on his greens!

Third, accurate and continually adjusted precipitation data is the key to replacing water that is lost through ET. Precipitation rates can be manually calculated (see below), computed in your central control software program, or more accurately determined by an irrigation audit.

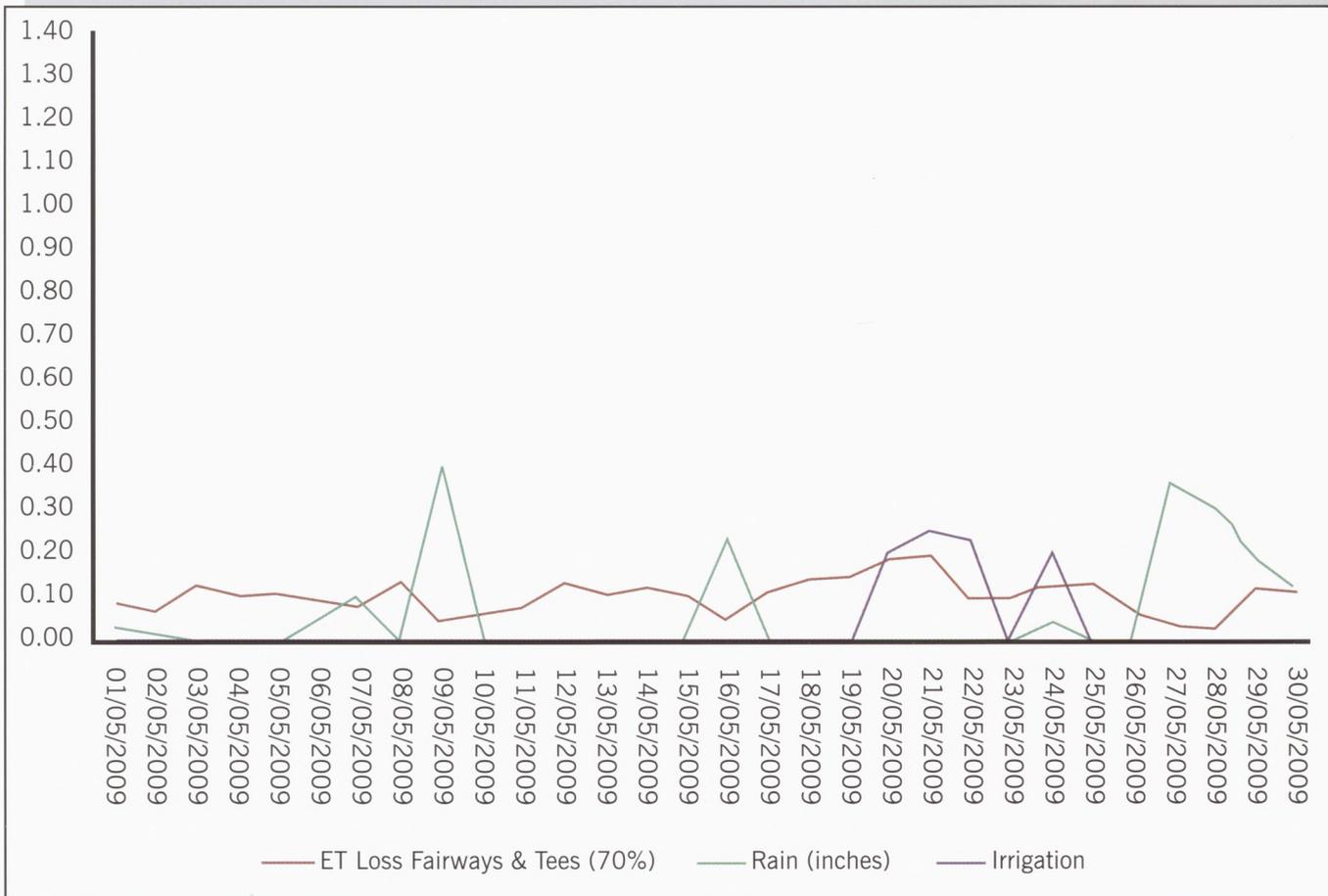
$$\text{PR} = 96.3 \times \text{GPM/Spacing between Sprinklers} \times \\ \text{Sprinkler Diameter} \times 0.8 - \text{Single Row Spacing}$$

$$\text{PR} = 96.3 \times \text{GPM/Spacing between Sprinklers} \times \\ \text{Spacing between Rows} - \text{Square Sprinkler Spacing}$$

So, why is accurate precipitation data and watering by volume (ET) more effective than using minutes?

For instance, a superintendent decides to water all his/her greens for 10 minutes. The sprinkler spacing and nozzles are different on each green, resulting in different precipitation rates. With this scenario, a different volume of water would be applied to each green. Whereas if the precipitation rates were known, then a specific volume of water would be applied on each green (i.e. 0.20 inches) and each run time would be adjusted based on the precipitation rate.

Lastly, the acquisition of a **reference ET** value is needed. Reference ET is a useful reference point for



irrigation water use calculations because it represents a specific rate of use of a given crop. For instance, weather stations reference crops such as alfalfa or turf grown at 6”.

Once a reference ET source has been established, it must be converted to represent the vegetation type we intend to irrigate. This modifier is called a crop coefficient. For turf, a crop co-efficient ranges between 60-90% depending on the height of cut. In addition to the crop co-efficient, an additional micro-climate factor is used to represent areas exposed to more wind/sun or shade.

Example: A local weather station shows a reference ET value of 0.28 inches over 3 days. If we apply a co-efficient common for greens of 60%, the ET loss is 0.17 inches. Now, if it was determined that the allowable depletion was 0.20 inches, this would raise a flag whether or not to irrigate. This is the perfect example of how ET data can help superintendents better predict their plant water requirements in order to irrigate more efficiently and improve playing conditions.

Additional advantages of using ET data:

- Evapotranspiration data, collected rain fall data, and the amount of water applied (inches), combined in a report (see above) is a great resource. Similar to like soil testing, this report can help you evaluate your management decisions.
- Watering by ET is considered a Best Management Process (BMP) and environmental bodies that govern water usage like to see superintendents monitoring their irrigation practices through reporting.

In conclusion, using ET data and watering by volume is a detailed process. It usually takes at least one season to obtain all the necessary data and to hone in the irrigation's precipitation rates and uniformity. But it doesn't stop there. Each year, adjustments will be required because an irrigation system performs under high pressures and great strain.

There is no better time than now to become an effective irrigator and to use your most valuable resource wisely.



by Dr. Eric Lyons
Department of Plant
Agriculture

Improving Root Growth: Chemical Approaches

In the past few decades the knowledge regarding plant hormones and how they affect plant growth has expanded rapidly. This has been due to physiological research aided by molecular biology. Each year new products come onto the market that are said to increase root growth, reduce shoot growth, improve branching and tillering. Some of these products inhibit the production of hormones in the plant, others increase production of a hormone or actually directly apply the hormone to the plant.

This summer has been one of the warmer seasons that I have experienced since moving to Ontario in 2004. This warm weather has encouraged many golf superintendents to look for ways to increase rooting depth. As the summer temperature increases root growth of both creeping bentgrass and annual bluegrass declines resulting in less total root mass (Figure 1). This is primarily due to respiration of the plants (energy utilization) exceeding photosynthesis of the plants (energy production). This net deficit leads to a decrease in energy for the plant to maintain its current root mass resulting in the shedding of roots that are deeper in the soil, farthest away from the energy source (leaves). This of course creates an ongoing negative cycle because the reduced ability to take up water leads to hotter plants and less photosynthesis due to the plant closing its stomata to conserve its water.

It is because the decline in roots is due to a negative energy balance, the method by which chemicals and specifically chemicals that manipulate the levels of plant hormones can increase root growth is limited. There

are two basic strategies: increase the allocation of the energy in the plant to root growth taking it away from other areas or increase the total energy production.

Giberillic acid (GA) is a hormone responsible for the elongation of cells in the leaf and shoot meristem. Often GA inhibitors (i.e. Trinexapac-ethyl) are used to decrease leaf elongation. Often it is reported in marketing literature that this reduction in growth at the shoot increases the amount of energy available for root growth. To my knowledge, no field study has ever been conducted that has shown that the use of GA inhibitors has increased root growth in creeping bentgrass or annual bluegrass. This is a theoretical example of how increased allocation of energy in the plant to root growth can be achieved.

There also exist bio-stimulants that act as auxin analogs. Auxin is a plant hormone responsible for apical dominance in the shoot and regulation of cell elongation in the root. Some bio-stimulants that act as auxin analogs appear to delay drought response allowing for longer periods of photosynthesis, increasing the overall energy status of the plant. This theoretically increases the amount of energy available for all growth including root growth.

One of the most recent examples of hormone manipulation is the use of kelp or seaweed that contains a mixture of auxin and cytokinins. Kelp has been used as a fertilizer for hundreds of years and in more recent years it has been associated with increased stress tolerance. Natural products containing cytokinins have been shown to increase levels of the hormone in the plant and also increased the root mass during a

complete dry down of the root zone (Zhang and Ervin, 2004). Other growth chamber studies that have manipulated rootzone temperature have shown adding synthetic cytokinins maintained greater root mass at very high soil temperatures (Liu et al., 2002). Recently, genetically modified creeping bentgrass was shown to have increased root to shoot ratios after a 14 day dry down period (Merewits, 2010). These studies show that cytokinins play a role in drought response and particularly in the ability of the plant to continue to grow roots under stressful conditions. One of the limitations of these studies is how close the studies are to actual field conditions. It would be extreme to expose golf greens to 14 days without irrigation and soil temperatures above 30°C rarely occur for extended periods.

While studies are showing that stress responses can be changed and in some cases made better for the turfgrass manager by the addition of certain plant hormones, the extremes of the stresses being imposed are often outside the realm of what we would allow the grasses we depend on for our livelihood to endure. While the upside of these products is being determined in the lab, the downsides are often not studied or forgotten. Plants have evolved mechanisms to survive stressful environments. Turning off these mechanisms through the addition of plant hormones may achieve more growth in the short term but if the stress persists we may actually cause the plant to experience catastrophic failure because the mechanisms for survival were not allowed to proceed. In addition the ratios of different hormones occurring in the plant change throughout the season and through the developmental stages of

the plant. The addition or inhibition of plant hormones may create imbalances and over compensation of other hormones in order to maintain the balance. In the end these concerns may or may not prove to be important but, it is always best to understand how the products we are applying actually affect the plant.

Root growth is very hard to measure so we will always rely on growth chamber and greenhouse studies that may or may not translate into the field. In the meantime there are many proven ways to increase root growth in the field, the most obvious is to increase the energy production (photosynthesis) by maintaining more leaf area. Increased leaf area is most easily achieved by increasing the mowing height. Green speed and ball role can be maintained through other management techniques, such as rolling and light frequent topdressing. Proper thatch management and management of soil porosity through verticutting and aeration can also

benefit root growth along with proper irrigation management. These are methods for increasing root growth that are time tested and proven in real life management situations. While less intriguing than the chemical options they are known to work.

Liu, X., B. Huang, and G. Banowetz. 2002. Cytokinin effects on creeping bentgrass responses to heat stress: I. Shoot and root growth. *Crop Sci.* 42:457-465

Emily B. Merewitz, Thomas Gianfagna and Bingru Huang Effects of *SAG12-ipt* and *HSP18.2-ipt* Expression on Cytokinin Production, Root Growth, and Leaf Senescence in Creeping Bentgrass Exposed to Drought Stress. *J. Amer. Soc. Hort. Sci.* 135: 230-239 (2010)

Zhang, X. and E.H. Ervin. 2004. Cytokinin-containing seaweed and humic acid extracts associated with creeping bentgrass leaf cytokinins and drought resistance *Crop Sci.* 44: 1737-1745.

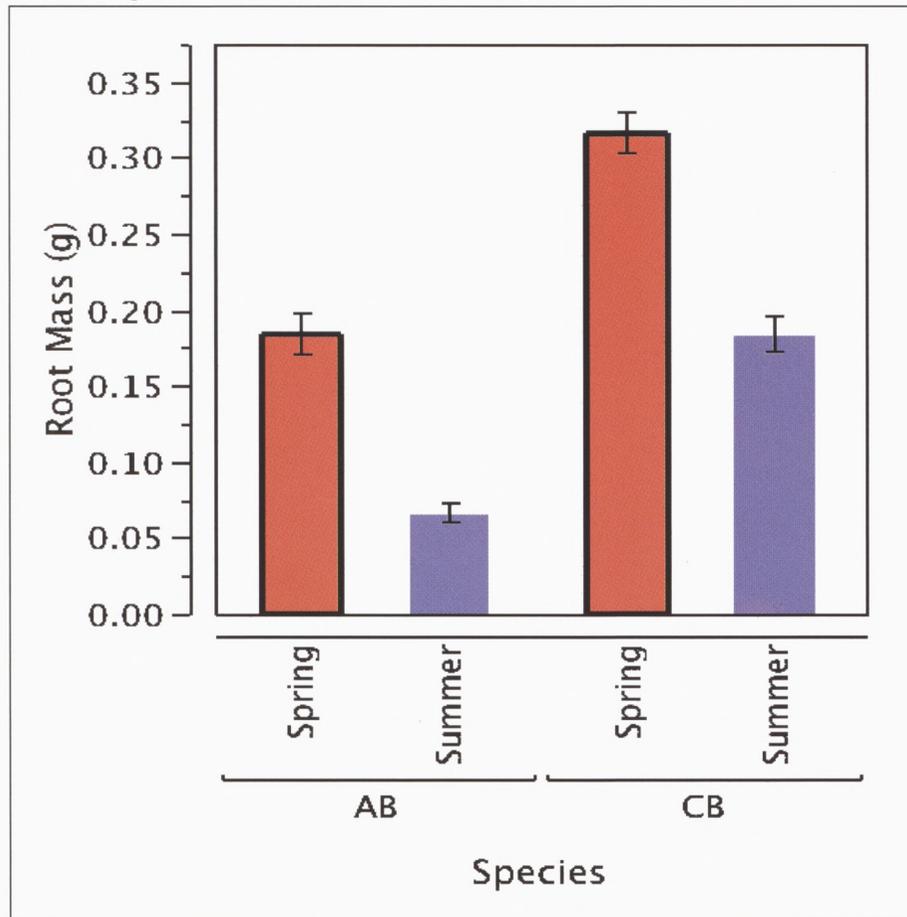
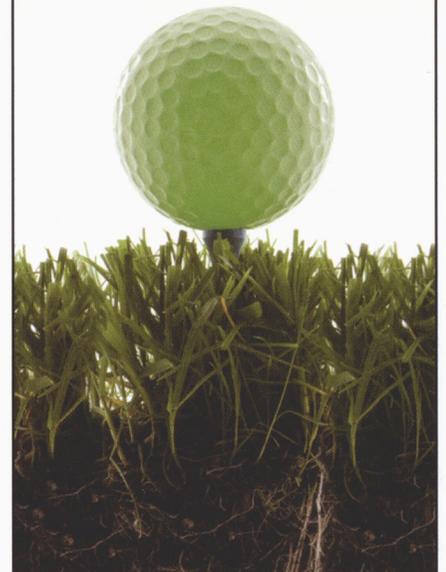


Figure 1. Dry Root mass of annual bluegrass (AB) and creeping bentgrass (CB) in the spring and summer.

Looking for a way to intensify fairway colour ?



Enviro-Sol
Your fertilizer solution

1-877-785-1098
www.envirosol.ca

Second to one

by Justin Parsons, Assistant Superintendent
Trafalgar Golf & Country Club

I think most assistants out there will tell you that the biggest challenge they face in their job is managing the staff. I imagine most superintendents would agree. Or, at least, their challenges would involve interpersonal relations of some kind. Be it their general manager, greens committee, assistant or some other individual directly related to daily operations.

It's kind of funny when you think about it, because the thing that challenges us the most in our jobs, is the one thing that you don't really cover in school. On the surface we manage turf and that is what our education focuses on. It provides us with a sound understanding of how to promote healthy and sustainable playing conditions. In actuality though, we manage the staff that help us manage the turf and there is a big distinction there.

For the most part, we aren't the ones mowing grass, setting reels and changing holes. We are relying on people to do it for us. We all know what needs to be done, the real issue is getting people to do it and there in lies the true test of the job.

With turf or equipment issues, there is a systematic way to troubleshoot the problem. With people, there is no blueprint to follow. There is no right or wrong way. Every person and every situation is different. I suppose this is why it's not covered in a textbook. Sure there may be some case studies to read about and you can always rely on the advice of your peers, but ultimately your decisions are governed by instinct. Those with good instincts succeed and the others, well, they will likely struggle.

Every season brings new situations that really make you stop and ask yourself, 'what is the best way to handle this?'

For example, what if one of your best staff members all of a sudden develops a penchant for being late? Let's say this is one of your veteran kids who you have invested a lot of time and resources into training. To further complicate the matter, let's say you really like the kid and enjoy having them on the staff. When this person does not heed verbal and written warnings, at what point do you cut them loose? I imagine it is when their disregard for your rules begins to undermine your authority. But when you have a lot of key events coming up at the club and you can't replace their experience in such a short period of time, the answer isn't always easy to find.

I imagine professional coaches face similar challenges. On the surface, we all believe that everyone should be treated equally on a staff or on a team. But is this really the case? Should Sidney Crosby be treated the same as Craig Adams? One's value to the team is far greater than the other. Moreover, one is replaceable while the other is truly exceptional. Ultimately, if you have drafted or hired properly, the Sidney Crosby's of the world will never put you in a position where you have to answer this question.

But what if you end up with a Terrell Owens or a Dennis Rodman? There is no questioning their importance to the team, but at what point do their disruptions outweigh their contributions? Sometimes the answer to this question never really becomes clear. You make a decision and you live with it, but no one ever pats you on the back and says, 'you handled that well'. I guess that's why they don't teach this stuff in school, because nobody is really an expert on interpersonal relations. It's far too convoluted.



RAIN BIRD

VANDEN BUSSCHE
IRRIGATION

Milton 1.800.263.4112
King City 1.866.703.KING
www.vandenbussche.com

**Quality Components,
Custom Solutions...**

Pump Stations, the heart of your irrigation system!

ALR MILES
Travel and More



BARTLETT.

BECAUSE CUSTOMER SERVICE,
JUST LIKE TREES, SHOULD BE
A BREATH OF FRESH AIR.



**BARTLETT
TREE EXPERTS**

SCIENTIFIC TREE CARE SINCE 1907

For the life of your trees.

PRUNING PEST & DISEASE MANAGEMENT
FERTILIZATION REMOVAL

CALL 877 BARTLETT 877.227.8538
OR VISIT BARTLETT.COM



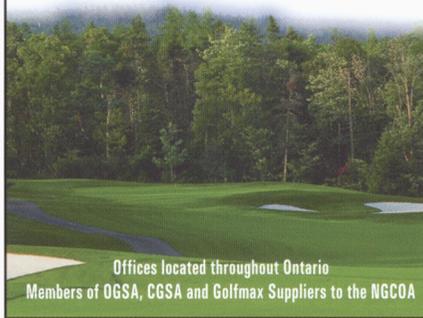
BURNSIDE

Serving the Needs of the Golf Industry

We can help with:

- Approvals for Golf Course Development and Operations
- Irrigation Water Supply
- Sewage Treatment and Disposal
- Environmental Management Plans
- Building and Clubhouse Design Services
- Irrigation Design and Consulting
- Environmental Impact Assessment
- Drinking Water Assessment
- Project and Construction Management

Toll Free: (877) 799-8499
E-mail: vcirone@rjburnside.com
Website: www.rjburnside.com



Offices located throughout Ontario
Members of OGSa, CGSA and Golfmax Suppliers to the NGCOA

**Enviro-Sol has
a trio that will
work for you!**

*They provide a slow, even
feeding with premium
nitrogen sources that
intensify colour and improve
healing with steady growth.*

- **30-2-6 (SGN 225) contains
Duration® and UFLEXX®**
- **25-2-12 (SGN 180) is
formulated with MDU,
XCU® and UFLEXX®**
- **18-4-18 (SGN 135)
contains 96% UFLEXX®**

ZANDER
SOD CO. LIMITED

(877) 727-2100
(416) 364-5700
www.zandersod.com



Bentgrass Blowout!!! Sale on specific plots

No. 1 Kentucky Bluegrass * Bentgrass * Extreme Fescue
Custom Grown Sod Available

OSC Turf

PO Box 7
Waterloo, ON N2J 3Z6
Tele 519-886-0557
Fax 519-886-0605
1-800-465-5849
www.oscturf.com

**Premium Products for all
Your Turf Needs**



BAYCO



SUSTANE
Natural Fertilizer
of America Inc.

**JACKLIN
SEED**

Enviro-Sol
Your fertilizer solution

1-877-785-1098
www.envirosol.ca

Heat wreaking havoc on golf courses nationwide

Superintendents, facilities pulling out all stops to address the challenge

Reprinted from a GCSAA E-Bulletin.

Prolonged periods of high temperatures, and in some cases, excessive rainfall, and high humidity have made life uncomfortable for golfers and golf courses alike, with Mother Nature holding all the cards for true relief.

"The simple fact is the cool season turfgrasses such as bentgrass, fescue, bluegrass, annual bluegrass (*Poa annua*) and others are stressed when temperatures climb and humidity is high," Clark Throssell, Ph.D., director of research for the Golf Course Superintendents Association of America, said. "Golf courses in many parts of the country experience this every year, however what makes the situation so dire this year are the high levels of extended heat and humidity, and the sizeable part of the country affected (Midwest, Mideast, Northeast and Mid-Atlantic)."

According to Throssell, golf facilities and those entrusted with managing the golf course, golf course superintendents, are not alone in this battle with the elements. However, the nature of their product makes their challenge greater.

"We are certainly seeing homeowners, athletic fields and businesses suffer turfgrass damage brought on by the conditions," Throssell said. "What makes it more difficult for golf facilities are the mowing heights are much lower and traffic is much heavier. That just adds to the stress on the turfgrass."

Throssell indicates that golf course superintendents are addressing the issue with a variety of management practices to make sure turfgrass survives. While there may be some short-term impact on playability of the course, the alternative is the loss of grass, the closure of the course and the additional costs of re-establishing playing surfaces (primarily putting greens).

He also cautioned golfers from thinking that water, whether from rain or irrigation, is the answer to the ills. There is a difference between heat stress and drought stress. Adequate irrigation will alleviate drought stress. Adequate irrigation will not alleviate heat stress. It is not only possible, but likely, for a turfgrass plant to be adequately watered and still suffer from heat stress under extended periods of high temperatures.

Among the practices that superintendents are implementing to manage golf courses include:

- Raising the mowing heights of playing areas, most notably putting greens.
- Alternating daily practices of mowing and rolling putting greens, with consideration to skipping a day if the schedule of play allows.
- Forgoing double mowing, topdressing, verticutting or grooming greens.
- Watering to provide adequate soil moisture, but not over watering as saturated soil will cause the turfgrass to decline rapidly.

- Hand watering as much as feasible. If a green has a dry spot or two, superintendents will hand water the dry spots only and will not water the entire green. When the entire green shows stress from a lack of water, superintendents use the overhead sprinklers and water the entire green.
- Avoid aerifying using large diameter tines that penetrate deeply into soil and remove a core of soil. If a superintendent feels the putting surface is sealed, venting using small diameter solid tines or other similar technique is employed.
- If fertilizer is required, small amounts of fertilizer are applied via a sprayer and observation of the response occurs before fertilizing again.
- Monitoring and adjusting golf car traffic patterns to minimize stress to turf.

Throssell indicated that during periods such as this, it becomes easy to compare golf course conditions and pressure decision makers into actions that might prove detrimental to the long term health of the playing surface.

"Communication is vital," Throssell said. "Superintendents, golf professionals, owners, managers and others must be in constant contact with golfers to educate them on what is happening at the facility. But golfers must also understand that golf courses are like snowflakes – no two are alike. Some courses may be able to withstand the challenges of Mother Nature better than others because of better drainage and soil conditions, better air flow due to the placement of trees, less traffic or the presence of greater financial resources.

"We know the weather conditions will become more agreeable. What is important right now is to manage the golf course in a manner so that turf can be kept alive until that point."

GCSAA is a leading golf organization and has as its focus on golf course management. Since 1926, GCSAA has been the top professional association for the men and women who manage golf courses in the United States and worldwide. From its headquarters in Lawrence, Kan., the association provides education, information and representation to more than 20,000 members in more than 72 countries. GCSAA's mission is to serve its members, advance their profession and enhance the enjoyment, growth and vitality of the game of golf. The association's philanthropic organization, The Environmental Institute for Golf, works to strengthen the compatibility of golf with the natural environment through research grants, support for education programs and outreach efforts. Visit GCSAA at www.gcsaa.org.

For more information contact:

Clark Throssell, Ph.D., GCSAA director of research,
1-800-472-7878



2011 ONTARIO GOLF COURSE MANAGEMENT CONFERENCE & TRADE SHOW

Windsor, ON | January 12-14, 2011

Details will be posted on
www.golfsupers.on.ca

We Sell & Transplant Large Trees
with tree spades ranging from 3490"

Members of I.S.A and O.G.S.A.
Owner Paul Hanousek certified arborist.



Moving your trees since 1980.
www.douglaswood.ca



1 800.353.3019

T. 519.856.2771 • F. 519.856.1447

P.O. Box 339 Rockwood ON
Canada NOB 2K0

Aquatrols

Revolution®

The superintendent's choice
for superior turf performance.

Aquatrols

800-257-7797 • www.aquatrols.com

Superintendents worldwide put their trust in Revolution to maintain the highest levels of turf quality and playability on their greens, even under stress.

Contact your local distributor today to see what Revolution can do for you.

- Uniform moisture, even across slopes
- Consistency of turf conditions
- Drier, firmer putting surfaces
- Less hand watering
- Easier to re-wet after drydown
- Quicker recovery from stress

On the REEL side of things



by: Warren Wybenga, Equipment Manager,
Donalda Club, Toronto
WWybenga@donaldaclub.ca (416) 447-5575 x263

"The Heat Is On" Stretching Your Budget

One of the points that has come up when I've had the opportunity to speak with many of you is that not every member is fortunate enough to work for a course that has a large budget to spend on equipment or even an equipment technician to look after the fleet and could I write an article that focused on some things that your fellow members are doing to stretch their budgets a little farther. True enough...so I thought I would put it to one such OGSA member James White, Superintendent at Quarry Golf Club in Ennismore, to share with me a few things that he was doing at his course and here's what he had to say.

JW: "I make good use of warranty coverage. We found it cost us less annually to run a \$400,000 fleet of equipment by flipping out our old fleet and leasing a newer fleet with a multi-year warranty. We have gone from \$25-\$30,000/year in repair costs to around \$5000."

Making use of any available warranty makes good sense. After all, that's what they're for. And leasing does provide the opportunity to get more machinery for what it would cost to purchase the same and the older a fleet gets, the more expensive it will get to maintain and repair. Do remember though that even a brand new machine can suffer a breakdown, be it mechanical failure or operator error and just because a machine is new it doesn't mean that all you have to do is turn the key and go. They still require maintenance to keep them running at peak efficiency with minimal down time so budget accordingly.

JW: "I am a fluids-a-holic. I change engine and hydraulic fluids frequently as well as filters. My staff helps with this often as well."

This really speaks to two points. Firstly, as already mentioned is the importance of regular maintenance. New or old, every machine needs to be maintained and the more you put into it, the more you will get out of it. Secondly, you likely have some staff members that are somewhat mechanically inclined and it might not be a bad idea to consider this when it comes time to hire for the season. Employees with this skill set can prove to be very useful when it comes to dealing with mechanical issues.

JW: "Greasing machines is a huge thing for us as it is one fairly inexpensive thing that we can do ourselves to prolong the life of our equipment. I try to have the guys trained on how to grease a machine when they learn how to operate it. We strive for a weekly shot of grease although I have been told not to grease that much and have also been told to grease everyday by different qualified sources. What we do seems to work as we haven't lost a bearing in a while. Also, I'm not sure if it makes much difference, but I am a clean freak. I hate when the machines are dirty or covered with that black organic matter stuff. We power wash machines, including oil coolers and rads every Friday and we also use degreaser every couple of weeks."

Let me address the over-greasing vs. under-greasing situation. I have found that seal and bearing manufacturers have made tremendous improvements recently however, even the best seal is no match for a shot of high pressure water. So while it is advantageous to keep your machinery looking its best, be careful when using pressure washers to blast that grime from any area where there are bearings, seals and electronics for that matter. Every grease point on a given machine is there for a reason and the best way to determine how often and how much grease to apply at each greasing is to consult the Operator's Manual that came with the machine. Some pieces of equipment also have a grease point chart located somewhere under the seat or body panel. Some seals are designed to allow contaminated grease to purge whenever new grease is injected into the cavity. These are usually located on components such as cutting deck rollers or blade mount spindles...any such area which is subject to wet conditions on a regular basis. These fittings usually require daily greasing and should be done after the day's mowing and wash up are completed. Be sure to wipe off the contaminated grease that is ejected so it doesn't end up on your turf. Seals that are designed to keep the grease in and contaminates out can be damaged by over-greasing. Applying grease until you can see it push past these seals is a very bad practice as it flips the lip of the seal off the mating surface thus allowing all the stuff you're trying to keep out, full access to the bearing. This is a major cause of bearing failure. Some grease points such as pivot pins have no seals at all and are designed to allow the old dirty grease to pass through to be replaced with new lube so

pay attention to what you're greasing and to apply the appropriate amount at the appropriate interval is always the best practice.

JW: "We try to put less wear on our machines by reducing mowing frequencies and sticking with higher mowing heights. Our fairways, for example, are up at .600" (dwarf bluegrass) and are cut twice weekly."

Mowing less often and at a higher height of cut should provide for overall healthier turf and I suspect that would also result in an increased level of disease and drought resistance, not to mention lower fuel consumption and less wear and tear on reels and bedknives.

JW: "I do all the set up of reels and rotary blades myself. I have an outside guy who does my grinding and I must say that I don't believe in all the excess grinding going on out there. I do believe in setting up a mower, and checking/adjusting bedknife to reel regularly. My tee and fairway mowers for example, will cut the whole season without a single mid-season grind. Last year, they were still cutting paper by September and all we do is make sure they get tightened down periodically. Note that I also don't cut our greens below .125" or use tournament knives on any greens mowers. One thing I started doing this year was to grind my reels after the first couple of cuts in the spring. Our reels sat on the floor until April. We cut a couple of times then sent the reels out for grinding."

Knowing how to properly set up a cutting unit, be it reel or rotary, is the most important mechanical skill you can possess on a golf course so if you don't know how to do it...learn. We all know how unappealing the appearance is when mowers aren't cutting they're best and properly set up and adjusted reel mowers do stay sharp longer. This once again results in decreased fuel consumption, healthier, more disease resistant turf and less money spent having your reels sent out to be sharpened.

JW: "I don't buy the \$45,000 greens mower. I've found that the \$20,000 basic mower cuts with the same reels and has far fewer parts and gadgets to fail. While they may be a little less sophisticated, they are sometimes easier to work on and it sure beats walk mowing."

It's hard to argue with that philosophy...sometimes less is more. I am a big believer in buying the best quality that you can afford but there is no sense in paying for technology that you don't need so do your homework and understand the job that you'll be asking that particular machine to do and the conditions that it will be operating under before you make your deal.

JW: "One of our more common issues is bent or cracked reels. Having no irrigation guy means that there's not a lot of sprinkler head leveling happening here so there is more potential to nick or worse, to bend a reel. We have gone as far as to heat up

blades with a propane plumber's torch, pound the blade back, tack weld the spider then backlap the reel. Often we have to grind in this situation."

With the cost of a replacement reel assembly at \$500 give or take, not to mention the cost of irrigation parts, too many of these types of failures can take a big bite out of your repair budget. Some time and training invested in leveling out those heads and educating your operators about the consequences of hitting those obstacles may pay off in the long run. That being said, accidents do happen and having the ingenuity to tackle a repair of that sort can get you back up and running. Be aware that just as with the tires on your car, reels are balanced at the factory and adding too much weld will create an imbalance that can rifle bedknives and damage bearings. The extra back lapping or grinding that undoubtedly accompanies this repair will also change the diameter of the reel, making it different from the others on the machine...too much of this will ultimately lead to a different and unacceptable quality of cut from that particular cutting unit. Go ahead and make the repair but be aware of the situation and consider taking advantage of off season parts purchasing incentives to replace the damaged reel.

JW: "It can be quite challenging working on a fleet with a gravel floor, no hoist, and just a little 2 ton trolley jack. A lot of components etc are meant to be accessed with a hoist I think. I am not sure why the equipment guys would manufacture machines this way. It is nearly impossible to avoid spilling fluid all over the floor when there is a reel, deck or hydraulics in the way of a filter, or under a drain plug."

I agree that working on turf equipment without the use of a hoist can be difficult at times but with a little resourcefulness, you'll get it done. Just be sure when using a floor jack or any other lifting device, to adequately support the machine before putting any part of your body underneath it, every time, no exceptions. Never trust your life to a hydraulic jack. Reels or decks can be removed if they are in the way of an oil change and I have made up an assortment of drain troughs out of sheet metal that allow me to channel draining oil away from interfering tubes, wires and hoses. As for the manufacturers, it is my opinion that they have made great strides recently to improve the accessibility of maintenance points but there's always room for improvement.

Whether you work at a big city club or a small country course, we are all faced with the same issues and have much to learn from each other. My thanks to James for allowing me to share his experiences with you and if you have anything on the go at your course that you think would be of value to your peers, simply contact me and I'll be happy to get it out there.

**SNOW MOULD CONTROL
FOR THE**

Thinking Super



Insignia **Premis**
FUNGICIDE FUNGICIDE

It's a no Brainer! INSIGNIA® plus PREMIS® for Snow Mould

Once the snow melts, turf problems like snow mould can rear their ugly heads, and it's time to get to work.

Or is it?

Now, with **INSIGNIA®** and **PREMIS®** working together to provide superior preventative and lasting control of many turf diseases, including pink and grey snow mould, you'll have one less thing to think about come Spring.

Try **INSIGNIA®** and **PREMIS®** together.

Yes, another "Thinking Super's" solution, only from **BASF**.

Can you afford NOT to play with these guys?

 **BASF**

The Chemical Company

For more information go to www.BetterTurf.ca

BetterTurf™ is a trademark of BASF. INSIGNIA® is a registered trade-mark of BASF Corporation, PREMIS® is a registered trademark of BASF Trademarks GMBH, both used with permission by BASF Canada Inc. © 2010 BASF Corporation. All rights reserved. Always read and follow label directions before product use.

Off the fairway ...



by Daisy Moore

Restoring Natural Areas

I would hazard a guess that this has been the best year ever if you are in the business of selling mulch. I wouldn't even be surprised if I learned that maybe we are growing trees simply so that we can grind them up into this luscious, organic, feel good product. Everywhere I look people are painting their properties with it. Many don't even bother adding plants. The current colours for mulch are brown, black and I think they call it red. I am bracing myself for the first trendy colour, like chartreuse or emerald green, made available by the next marketing genius. Meanwhile plants sit on overcrowded benches in their designer pots and fancy labels with sale stickers on them. If this is what we are agreeing to call "gardening" then I might have to go back to grade one and start all over again, or maybe get on the next shuttle to Mars.

The good news is that mulch isn't concrete, so it is a step in the right direction from an ecological stand point. However, mulch as a lawn alternative or ground cover misses the point entirely. The purpose of mulch is to enrich and insulate the soil, for the benefit of plants. Mulch is an excellent way of protecting roots by way of preventing water loss, stabilizing the temperature of the root zone and preventing annual weeds from invading. In addition to this, mulch is made up of organic material so it will break down to add humus and nutrients to the soil. All of this is magic when used in moderation and when you don't forget to add the plants. Plants are the building blocks of gardens, not mulch and not stonework or patio furniture either. Plants add life, beauty, drama, food, scent, provide habitat and invite other living beings to reside there with them. These are the things that make gardens sensual, useful and therapeutic. They are alive.

We have all heard it on numerous occasions that gardening is the hottest trend there is these days.

Staycations are making people spend time and money on their home landscapes and more and more people want to do it themselves. The truth be told, people are too broke to go on holiday and spending money on gardens is one of the first things to be axed. Those new to gardening are terrified of weeds and this year has given us a bumper crop. They turn to mulch and run inside to hide. My hope is that new gardeners will get bored with the bland look of mulch and figure out for themselves that maybe they should put something pretty in the middle of it. Take a chance, live a little and in fact get excited rather than bothered if some sort of change or movement happens in the mulching region. They will soon realize that plants are literally a growing investment and much pleasure and pride can be gained from the ownership and nurturing of a garden.

Those who are not new to gardening are enjoying a fantastic season of growth and bounty. Bigger blooms, taller plants and a longer flowering season to name a few. I can't remember a year when I could so freely cut flowers for the indoors and have so many choices. This year more than any other I have noticed that the difference in the look of a property between one of a gardener and one of a non-gardener is remarkably stark. You either do it with gusto, or you don't. We are losing the middle ground, just like we are losing the middle class. This concerns me as a gardener who is passionate about her trade. How is it that so many people have abandoned the idea of gardening? Does it appear to be too steep a hill to climb? Have we made it too complicated? Why is there such a disconnect with the plant world by so many people? Or is everybody just broke? I am not sure which one is worse.

Daisy is a professional horticulturist. She operates a garden design and consulting business from her home in Elora. Her website: www.daisymoore.com has samples of her work.

Tom Margetts, T. Ag
Soil and Turfgrass Consultant

27 Waterloo St.
New Hamburg, ON
N3A 1S3

P: 519-662-2479
C: 519-496-2143
F: 519-662-2479

www.innovativeagronomics.com
Email: tom@innovativeagronomics.com

David C. Smith, P.Ag., C.G.C.S.
Soil & Turfgrass Consultant

185 Oriole Crescent
Gravenhurst, Ontario
PIP 1C6

(7645)
Office (705) 687-SOIL
Fax (705) 687-3518
Cell (905) 512-6004

(8873)
Toll Free 1-888-607-TURF
dave@dcsturf.com

Looking back

5 Years Ago Today

by Barry Endicott

The Board of Directors in 2005 were as follows: Paul Scenna, Donalda (pres.), Rob Ackerman, Weston (past pres.), Bob Burrows, Rosedale (vice), Sean DeSilva, Taboo, Jeff Stauffer, Credit Valley, Chris Andrejicka, Essex, Jarrod Barakett, Deer Ridge, Randy Booker, Dundas Valley, Doug Breen, Golf North, Trevor Clapperton, Dalewood and Rob Gatto, King's Forest. Office administrators were Dorothy Hills, Pat Thomas and Deborah Badger. John Bladon, Nu-Gro Corporation, was editor of *Green Is Beautiful*.

The Ontario Golf Superintendents' Association co-hosted the 56th annual Canadian International Turfgrass Conference and Trade Show at the Metro Convention Centre. OGSA Chairman was Sean DeSilva, Jim Nix was president (CGSA) and Bob Burrows was Ontario director (CGSA). Executive Director of the CGSA, Ken Cousineau, was assisted by committee members; Sean Desilva (co-chair), Paul Scenna, Jeff Stauffer, Bill Fach, Corrie Almack and Marie Thorne. Rhod Trainor, Hamilton Golf and Country Club, was selected as Superintendent of the Year.

On the move: John Parker of Trafalgar moved to Beaverdale Golf Course in Cambridge. Brian Brooker was the new superintendent at Hornby Glen Golf Club in Hornby and Ted Ellis of Blue Springs, moved to Huron Oaks Golf Club, Bright's Grove. Mark Prieur left Markland Wood and went to Trafalgar and Mike Pellerin went to North Bay Golf and Country Club. Ryan Beauchamp left St. Thomas and went to Glen Abbey Golf Club, Oakville and Wade Beaudoin took over at St. Thomas. Peter Kinch moved from Glen Abbey Golf Club to Lampton Golf Club and Dave Svab moved to Buckridge Golf Course in Markstay. Jason Pickering was the new superintendent at Tamarack Ridge Golf Club, Putnam and Jason Bindi took over as superintendent at Nobleton Lakes Golf Club. Bob Heron retired from Beacon Hall Golf Club in Aurora, and Paul Scenna was hired as his replacement. Scott White, who was Paul's assistant at Donalda, took over as superintendent. Brian Taylor went to Mystic Golf Club in Ancaster and Tim Steen of Vanden Bussche Irrigation, joined Engage Agro. Josh Dewar was

the new representative at Saltech Ontario, Ian Bowen left The Rock to start work for Hutcheson Sand and Mixes and Jason Winter went to The Rock. Barry Endicott was working at Gordon Wendover Construction and Simon George was covering the GTA sales area for Maple Turf Supply.

Norman McCollum, Research Superintendent at the Guelph Turfgrass Institute retired. Norm has touched careers of many individuals through his involvement with research and teaching in both the Short Course and the Associate Diploma program. His many friends were invited to participate in his retirement party which was held at Victoria Park East Golf Club.

In Memoriam:

Keith Nisbett (1917-2005) In 1980, Keith Nisbet retired as superintendent of Westview and turned the management of Westview Golf Course over to his son Colin. For many years, Keith and his wife, lived in an apartment that overlooked the old Aurora Highlands Golf Course in Aurora, where it all began. At the National level his support of the Canadian Golf Superintendents Association helped that association get off the ground. In 1966, Keith became a charter member of the Canadian Golf Course Superintendents Association. The John B. Steel Distinguished Service Award was awarded to Keith, in 2001, for his life long contribution to the association. Keith also held the position of President to the OGSA in 1966.

Rene Muylaert (Life Member) passed away on May 7th in Strathroy. His big break in the golf design business came in 1960 when he was asked to be the greens keeper for a new course to be built, the Chinguacousy Country Club, (now the Caledon Country Club). The architect originally hired for the project declined and the developer asked Muylaert to step in and design the course. A year later, Muylaert was asked to design nearby Glen Eagle Golf Course and, by 1965, golf course design had become a fulltime endeavor.

The bulk of Muylaert's work can be found in the Greater Toronto Area, just north of the GTA and throughout southwestern Ontario. Courses include Diamond Back, St. Andrew's Valley, Horseshoe Valley, Nobleton Lakes, Pheasant Run, Hawk Ridge, Heritage Hills, Tangle Creek, Sparrow Lakes and Peninsula Lakes.

Mac Frost passed away on March 30th. Mac owned and operated, Cedar Brae, Parkview, Brookwood, Spring Lakes and Vespra Hills. He was a member of the OGSA and CGSA and the winner of the John B. Steel Distinguished Service Award in 1993. He was inducted into the Ontario Golf Hall of Fame in the builders category in 2005. Mac was also a founding sponsor of the Guelph Turfgrass Research and Information Centre.

Ted Charman passed away during the summer. Ted had been the superintendent at Toronto Ladies, London Hunt and The National.

The Spring Field Day was held at the Guelph Lakes Golf & Country Club on Monday June 20th, hosted by Don Heinmiller. Dr. Clayton Switzer presented the winning

trophy to Bruce Burger with a 72. Other scores were Scott Gardener 72 and Paul Scenna 76. Dr. Switzer had just recently been inducted into the Ontario Agricultural Hall of Fame for his contributions in various positions in agriculture that resulted in the creation of the Guelph Turfgrass Institute.

The OTRF Fundraiser Golf Tournament was held at Eagle's Nest Golf Club in Maple on August 2nd, hosted by Brent Rogers. The 60th Annual Alex McClumpha Tournament was held at Lakeview Golf Course hosted by Bruce Burger. Low scores were Thom Charters 71, Bill Fach 75, Rick Trainor 77, Rhod Trainor 78 and Tom Brain 79. Thom Charters won the George Darou Trophy presented by Turf Care. The Can/Am Challenge was held at Point West Golf Club on May 2nd hosted by Lamont Anderson. 1st gross winning team was Kelly Barnet and Adam Spence. The Americans retained the cup with 16 1/2 to 13 point victory. The 37th Presidents' Day was held at Scarboro Golf and Country Club, hosted by Keith Rasmus. 1st place winning team was from North Halton, Dean Baker (superintendent), with a score of 120. The Pro Super was held at Dalewood Golf and Curling Club, with Trevor Clapperton as host.



ROBERT KAINS GOLF COURSE DESIGN LTD.

Providing the Canadian and International golf communities with a progressive design philosophy and dedication to quality

201-902 8TH STREET
CANMORE, ALBERTA
CANADA
T1W 2B8

PHONE: 403-678-6980
FAX: 403-678-3841
EMAIL: KAINS@KAINSGOLFDESIGN.COM
WEB: WWW.KAINSGOLFDESIGN.COM

ALMACK AGRONOMIC SERVICES INC.

SPECIALISTS IN TURFGRASS NUTRITION



Corrie Almack P.Ag.

Almack Agronomic Services Inc. Tel: (905) 689-6174
Box 256, Carlisle, On Fax: (905) 689-8522
L0R 1H0 Email: c.almack@sympatico.ca



FAST FOREST

LARGE TREE SALES AND RELOCATION

Phil Dickie - ISA Certified Arborist
pdickie@fastforest.ca

270 Shoemaker Street, Kitchener, ON N2E 3E1
P: (519) 748-6610 • F: (519) 748-6626 • www.fastforest.ca



Darryl James
Certified Golf Irrigation Designer
Certified Golf Irrigation Auditor
ISA Certified Arborist ON-1152A
OJA Technical Agrologist T. Ag

phone: (416) 873-9648
15 Walmer Road, Suite 401
Toronto, Ontario, M5R 2X1
arbor turf@gmail.com
www.arborturfsolutions.com

Love Your Turf!

Turf or consequences

by Doug Breen, Superintendent
Golf North Properties

The Decline of Social Discourse

Many years ago, I read an article from a 1920's magazine lamenting that the influence of jazz music, flappers, and the demon rum, had plummeted the level of public discourse to an all time low. Men were "no longer tipping their hats to ladies on the street", and phrases like "Good evening" had been replaced by atrocities like "Hi-ya champ". There's an even older quote about children of the day "tyrannizing their teachers" and "disrespecting their elders". The author, Socrates, was concerned that the young people of his day were "more interested in idle chatter than exercise". I suspect that both authors' concerns were legitimate, but I can't imagine what they'd think if they were still alive today.

Yesterday I sat through a "working business lunch"; a euphemism that we've developed for the fact that employers no longer think it unreasonable to expect you to continue to work all day without breaks. I figure that the "working bathroom break" isn't far behind. Considering how many people answer their emails in there already, we're easily halfway along. During that lunch, there were long spells of time where no one was actually talking, but rather, all four of us were madly typing emails to other people who were also having working lunches (or in bathroom stalls), while thumbing away on their keyboards. One email was from the guy across the table from me. He thought that it would be easier to forward me an email sent from the guy sitting to my right, than for one of them to just tell me what it said. Socrates would not have been impressed.

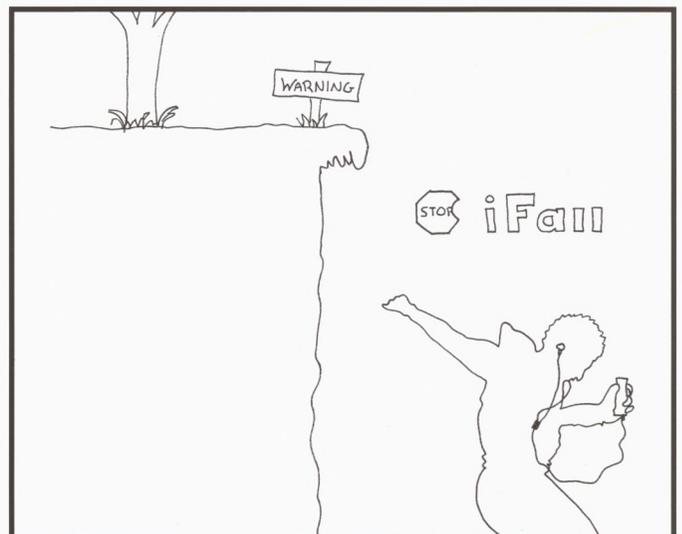
When I was a kid, we ate every evening meal at the kitchen table - everyone in their appointed spot, and the TV firmly in the "off" position (even though it was in the other room). The only time I was ever allowed to watch TV during a meal, was the day that Richard Nixon resigned his Presidency. We didn't even answer the phone during dinner, and this was years before answering machines were invented. Instead, we had conversations and learned manners. I wouldn't have the courage to answer an email at my mother's dinner table even now, and she's in her seventies. Krista the kids and I, are only home for dinner at the same time about three nights a year, because someone's always rushing from work to hockey, to football, to horses, to sleep. But at least when we do sit down to a meal, even if it's poutine in the lobby of an arena, we have a very firm, "no electronics while eating" rule. I'm glad to see how many courses have banned their use within the clubhouse, I only wish they'd ban them from the course entirely. I've waited many times for someone to take their putt, as they talked far too loudly on their cell phone. There ought to be a basket at the front gate to leave them in (or a wood chipper). The rule among my friends, is that we only use electronics within one club length of the golf cart, no closer to the hole. I think it should be a two stroke penalty for ignoring that guideline. Socrates is turning in his grave.



Another side effect of texting, is some of the poorest spelling and grammar since the invention of public education. Not only can my kids and their friends not spell, but they don't see any reason why they should learn how to spell. Which brings me to profanity. I coach football, and am trainer in hockey for Bantam aged boys, and they have mouths on them like long haul truckers. And truckers are better spellers. Socrates is going to come back and haunt us.

But this decline of public discourse is ubiquitous. It's not just young people. The clientele that I see every day at the course, used to carry themselves with a certain degree of civility and elegance. Not any more. They're getting more rude, more aggressive, and more demanding every year. The pro shop and grounds staff get at least one really good tongue lashing a week - generally about something well out of their control. In one month, we had three different beer cart attendants come into the clubhouse crying because of things that were said to them by golfers. Not harassment issues, but calling them stupid. Yelling at them for not coming around enough, or conversely, coming around too much and distracting them. The day that you find yourself berating a young girl who brings you ice cold beer on the course and reducing her to tears - it's time for some serious soul searching. Socrates would kick your arse.

In the end, I'm not sure that things are any worse now than they were in the 1920's or in ancient Greece, but I certainly know how those two men felt. I also have seen the decline of public discourse in my lifetime. But the generation after the 1920's has been called "the greatest generation", and one of the troublesome students that Socrates was complaining about turned out to be Plato, so perhaps it's just the way it has always been. I still wish they wouldn't wear headphones in public though.





Agrium
Advanced
Technologies

Ontario's
Professional
Turfgrass
Solutions Team

For information on our complete line of premium fertilizer, pest control products, seed, and more, contact your Agrium Advanced Technologies representative:

SW Ontario

Brian Bennett
bbennett@agriumat.com
519-421-6593

GTA

Bill Martel
bmartel@agriumat.com
416-508-6115

Northern Ontario

Kevin Jensen
kjensen@agriumat.com
705-627-3590

Eastern Ontario

Perry Brazeau
pbrazeau@agriumat.com
289-338-1834

Niagara/Central Ontario

Craig McCutcheon
cmccutcheon@agriumat.com
905-536-0357

Toll Free Customer Service 1-800-461-6471

Visit us online at www.turfpro.ca

TORO**Count on it.****Designed for the ups
and downs of your course.****And the economy.****Introducing the new Toro® Groundsmaster® 4300-D.**

Steep slopes. Wet terrain. Tight budgets. Bring it on. The new Toro Groundsmaster 4300-D is designed to give you unsurpassed performance and value in a medium-sized rotary mower. With its unique CrossTrax® all-wheel drive system, a powerful 44 hp turbo-diesel engine and five 22 Contour® Plus cutting units, it leaves the competition spinning their wheels. Talk to your Turf Care Sales Representative today about the new Groundsmaster 4300-D.

The right choice. www.turfcare.ca

**Turf Care Products Canada****200 PONY DRIVE, NEWMARKET, ONTARIO L3Y 7B6****PHONE 905-836-0988 • FAX 905-836-6442****London****Ph: 519-668-7664****Fax: 519-668-3722****Milton****Ph: 905-836-0988x7048****Fax: 905-636-1513****Scarborough****Ph: 416-298-2101****Fax: 416-298-8758****Gloucester****Ph: 905-836-0988x5501****Fax: 613-822-2099****TURF CARE**

Helping your business grow.