WGCSA

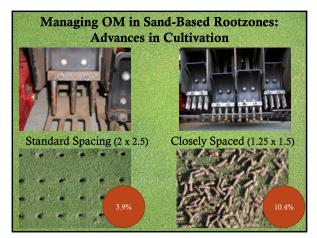
Excessive Rootzone Moisture

- Leaching
- Anoxic rootzone
- Shallow rooting
- + Denitrification
- Thatch accumulation
- Algae
- Moss
- · Black layer

Poor stress tolerance

- Poor quality playing surface (ball marks)
 - Disease (pythium blight, brown patch, and others)
 - Waste of water (\$\$\$\$\$)





Top: Dr. Karcher shows the evils of too much rootzone moisture.

Middle: Dr. Karcher shows the benefits of a quick syringe on a hot day.

Bottom: Dr. Karcher shows more holes are better for organic material removal. Dr. Karcher returned to present "Putting Green Summer Stress - What To Do and What Not To Do." He got right to the point and discussed excessive rootzone moisture and the many problems it causes.

Black layer is often diagnosed as a problem with weak turf when it is the result of wet soils causing anaerobic conditions.

Evaporation and transpiration are the best ways to dry out greens but air movement is key to that process. Fans have become popular to move air across the surface and reducing turf stress. Dr. Karcher presented fans can reduce canopy temperatures by as much as 14 degrees. Fan placement is key as the effects of the fan is lost the further you move away. When monitoring wind speeds it is important to take measurements at the surface not head high. Doug recommended tree removal when possible over the installation and expense of fans.

Organic matter management is extremely important and many of the new grasses provide for a denser surface and increased organic matter. This organic matter increases water in the profile and reduces infiltration and air/gas exchange.

Dr. Karcher expressed more is better when it comes to aerification and mechanical thatch removal. The thicker the verticut blade or the more aerification holes the more thatch is removed. From the photo on the left you can see a closer spacing greater increases the amount of the green affected.

The research also shows that an aggressive verticutting with a Graden at 3mm, 2mm or 1mm removed up to 20% of surface organic matter while the most aggressive aerification removed less than 5% surface organic matter.

At the same time surface healing time increased with the more aggressive treatments.

Doug then turned to show the benefits of rolling in addition to or in substitution of mowing. The 24 plot study showed how rolling could allow turf managers to reduce mowing frequency or raise height of cut without reducing green speed. Repeated rolling did not improve turf quality in this study but it did not statistically reduce quality.

Dr. Karcher finished up with information on the benefits of moisture management and the process to calibrate a moisture probe during spring or fall to different greens construction methods. Once the number is found for your site he recommended to not take greens to the wilt point during the stress times of the year. The purpose of finding the wilt point during mild conditions is to avoid stress the rest of the year.

Dr. Reicher finished up the morning with the talk "Extreme Weed Management - New Solutions for New Problems." He started with his old friend Poa Annua and reiterated thoughts from his earlier talk. Poa management needs a multi pronged approach with multiple products forever. He is cautiously optimistic regarding the new poa cure product but stressed it will not be a stand alone product and resistance to it will come in time. Costs should be near \$5,000 per acre and for many golf courses they need to figure out how to spray a round green with a square sprayer.

Velocity has shown promise on reducing annual bluegrass populations in creeping bentgrass and perennial rye fairways. Prograss can also work on perennial rye fairways but it usually requires the help of a harsh winter to take out the poa.

On Kentucky Bluegrass fairways Tenacity has shown it can be effective under the right conditions. Tenacity is safe on perennial rye seedlings but not the mature plants.

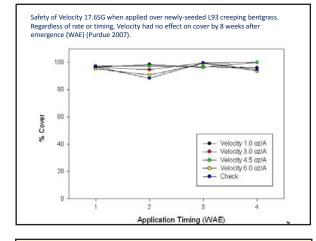
Dr. Reicher finished up with taking weed problem challenges from the crowd and doing his best to give a solution to various pesky weeds.

WGCSA

KBG Fairways: Tenacity?

- Tenacity is not labelled for Poa annua
- Very safe on KBG including seedlings and also PRYE seedlings
- Three applications at 5.3 oz/A 7-10 days apart is typical
- More frequent applications improve control
- Include 0.25% v/v NIS + 2.5% v/v UAN (urea-ammonium nitrate 28% N)
- 20 GPA most effective
- 1.0 lb N/1000 w/urea shortly after applications start
 Fall applications effective, but inconsistent with only 3 fall +/- 1
- spring applications

 Control from fall apps are equal to or better than Prograss
- Univ of Illinois:
 - >70F or hotter
 - 5 apps @ 3.2 oz/A applied 1-2X/week



Top: Dr. Reicher shows a reliable Tenacity program on kentucky bluegrass fairways.

Center: Dr. Reicher shows the safety of Velocity on creeping bentgrass seedlings.

Bottom: The panel discussion included Jim Vanherwynen, Mark Storby and Jon Canavan

After lunch we gathered for the panel discussion moderated by Robert Vavrek. Jim Vanherwynen, South Hills Country Club, Mark Storby, Oneida Country Club and Jon Canavan, Milwaukee County discussed a variety of questions from Bob and the audience.

Staffing, staff motivation and staff retention were key topics along with mowing and rolling patterns, mower technology and budget constraints. Overall the three provided insight into what works at their facilities.

Before the annual Roundup from USGA Green Section Agronomist Bob Vavrek there were a couple announcements.

Shelly Mazurek with Milorganite will retire before the next symposium and was recognized by the WGCSA and attendees for her service to the event. Shelly has been involved since 1980 and works behind the scenes organizing the event, making speaker travel arrangements, setting up rooms and ensuring the symposium committee stays on track. Through Shelly's work and Milorganites sponsorship of speaker and room costs the symposium stays a low cost educational opportunity for attendees. Any profits from the event are donated to the O.J. Noer Foundation.

The second announcement was a gift from Dr. Danneberger asJ aime discussed how "back in the day" the old timers including O.J Noer himself would sit around and talk turfgrass while enjoying some whiskey. To continue that tradition Jaime and Shelly handed out a shot of whiskey to those in attendance. So not only do we have great speakers and education at a great facility while donating money to the O.J. Noer Foundation but we have whiskey also. The Wisconsin Golf Turf Symposium is truly the best educational event anywhere.





WGCSA



Shelly Mazurek shown with WGCSA President Chad Harrington and USGA Agronomist Bob Vavrek was honored for working with the symposium for 34 years.



Our hosts, Shelly Mazurek and Jaime Staufenbeil



News and Notes From WGCSA Members

By Matt Kinnard and The DHD Team

The cold blustery days of winter we are accustomed to here in Wisconsin have been that and then some this January. At the start of the New Year, I was making plans to simply not go outside at all during the brunt of the predicted negative degree temperatures and double-digit negative degree wind chills... my plan, however, soon unraveled. A buddy of mine called me on January 2nd and said, 'We are going to the Packer playoff game, you're coming, and I won't take no for an answer.' So, naturally my answer was, 'NO!' It didn't take much persuading though with the argument that this could be the best, stupid idea he's ever had.

It was game day and my three friends and I arrived at Lambeau, with temperatures that could be described as cold, equipped with multiple layers, hand warmers and a couple bottles of contraband. We made a quick tailgate stop just steps from the Oneida Gate for a couple pregame apple pie shotski's and in we went. The rest is history and although it was a good game, it didn't turn out like us Packer fans had hoped. As it turns out, it was only the seventh coldest game in history at Lambeau for those of us in the stands, but if you couldn't tell on TV, we all had a great time!

Career Moves

Kenosha Country Club has hired Paul Bastron as its new golf course superintendent. It's an exciting opportunity for Paul, made that much better because he has made the Kenosha area his home for the last ten years. He's established an impressive career here in the Midwest, most notably as the Superintendent at Glen Flora Country Club in Waukegan, IL from 1987-2011. Paul was also the Superintendent at Ottumwa Country Club in Ottumwa, IA for three years in the mid eighties. His education background includes two degrees, one from Indian Hills Community College in Iowa and the other from Michigan State University where he graduated from the Turfgrass Management Program. Most recently Paul gave sales a shot traveling Wisconsin and Illinois for JW Turf and Midwest Turf Products. He also serves on the board of the Wee One Foundation, which we can all appreciate. Congratulations Paul!

Jon Dippel has been hired as the Assistant Superintendent at Oshkosh Country Club. Jon started his golf career at Pine Hills Country Club in Sheboygan while acquiring his bachelor's degree in science at Lakeland College. Working for Rod Johnson at Pine Hills inspired Jon to further his education and complete his Turf Management Certificate from Penn State in 2010. Jon went on to work as the Assistant Superintendent at New Berlin Hills Golf Course and The Wisconsin Club in Milwaukee. John is married to his high school sweetheart Brittany and they have a 4 year old son, Logan. Congratulations Ion and much success at OCC!

Ben Pease a graduate of the University of Wisconsin and most recently Assistant Superintendent at Whistling Straits ac-

cepted the position of Turf Research Facility Superintendent at North Carolina State University. In addition Ben participated in the Ironman Wisconsin Triathlon, in Madison on September 8th. The triathlon consists of a 2.4 mile swim, 112 mile bike ride, and 26.2 mile run. Ben took 35 minutes off his 2011 time and finished in 11 hours, 51 minutes and 50 seconds and placed a very imprescompetitors despite

whitecap waves and biking into the wind. He said, 'It wouldn't have been possible without the support of my family, friends, coworkers, and the thousands of spectators.' Congratulations Ben on your impressive accomplishment and new job!

Sold!

The historic Old Hickory Golf Club was recently sold to new owner/operator Mark Bergman. For the last seven years Mark was the head golf Professional at Merrill Hills in Waukesha, WI. He was looking for a new challenge and Old Hickory provided him with the perfect opportunity. Old Hickory was established in the 1920's originally designed by Tom Bendelow with Billy Sixty adding nine holes. **Lee Mahnke** is the superintendent. Congratulations Mark!

Please pass along any significant news or happenings around the state to Danny, Mike or me. We want to spread the good news. You can also email me at m.kinnard@sbcglobal.net or call at 920-210-9059.



placed a very impressive 483rd out of 2,544 John Kuhn scores big, but seconds later, ugh... falls short with a Lambeau Leap attempt.

 $\mathbf{2}$

BULLETIN OF GREEN SECTION OF THE Vol. III, No. 1

The Greens Keeper

EDGAR A. GUEST

He's on the job at break of day and when the stars come out, There's always trouble on the course for him to fret about, He starts the gang to work at dawn and follows them around Then listens to committeemen whose wisdom is profound, They talk of "bents" and "fescues" in a way that makes him squirm For they acquire much knowledge in one brief official term. His task is one that calls for tact, for lacking that it means Next year there'll be another man brought on to keep the greens.

The members seldom know his name, or have a smile for him, They only wonder why it is the course is not in trim. They only rave and rage and rant while hunting for a ball And wonder why the greensman hasn't cut the rough this fall, And when they find a cuppy lie or footprints in a trap "The course is in a rotten shape!" declares each gloomy chap. And yet my hat is off to him, now winter intervenes, I want to pay my tribute to the man who keeps the greens.

He's on the job from dawn to dusk, a million pests to fight, 'Tis his to see that every green is watered well at night. The weeds attack his finest work, the drought destroys his grass, The rain beats down the tender shoots, but still the players pass And still they play the game they love, a happy golfing clan Who never stop to count the odds against a single man. And so I wave my hand to him, who toils in sturdy jeans, The best old friend all golfers have—the man who keeps the greens.

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The power of the active ingredient contained in Daconil[®] fungicide combined with a revolutionary Turf Protein Booster results in longer, more efficient, and broader spectrum turfgrass disease control.

- Boosts turfgrass natural defense proteins (PR proteins)
- Enhances overall plant health

This poem by Edgar A. Guest

was originally printed in the

January 25, 1923 Bulletin of

The Green Section of The U.S.

Golf Association, Vol III, No. 1

- Increases tolerance to environmental stresses, like drought
- Suppresses activity of fungi, bacteria, viruses, and abiotic diseases

To learn more about Daconil Action, visit DaconilAction.com or contact:

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Nothing is Certain, Except Death, Taxes, and Snowstorms for WTA Winter Conference

By Tom Schwab, Manager, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

The snow caught us once again for the **L** annual WTA Winter Conference, now called Turfgrass Research Day / Conference and Webinar. We've tried moving the conference to earlier and later dates but we always seem to anger the snow Gods with our messages of better turf for the summer season. However, the 3 inches of fresh snow that fell on conference day didn't dampen attendance. There were still 65 registrants and 18 students/ staff/researchers that ventured to the UW-Madison campus to attend the live conference. An online webinar was added as an option last year for those that preferred to attend from the comfort of their home or work computers. This year, webinar participation added 34 participants.

Dr. Doug Soldat started the conference with presentations of the annual turf scholarships. Adam Wepfer received the Egon Herrmann Scholarship, presented by National Seed. Ben Luedtke received the WTA / James Huggett Memorial Scholarship. Luke McGhee received the WGCSA / J.R. Love Scholarship. Tyler Gerritts received the Charles O. Newlin Scholarship.

The first speaker of the conference was Dr. Paul Koch, UW-Madison's newest turf science professor, who officially started the job 14 days earlier. Dr. Koch is no stranger to Wisconsin, having studied at the UW-Madison for all three of his scholastic degrees starting in 2001 and being manager of the TDL since 2006. Dr. Koch's subject was control and management of rust disease. He introduced us to the history and complexity of three separate rust species, namely stem, crown, and stripped rust. He also informed us about the documented increase in rust severity over the last 10 to 15 years. His research is helping identify which rust specie is more likely to attack which turfgrass specie or even cultivar. His research will continue into next year and he's asking for your help. All turf managers from throughout the country can help him next summer by send rusting samples to the TDL whenever they find it. More information can be found at www.tdl.wisc.edu.

Dr. Soldat was the next to present. He talked about the rapidly expanding research into microbiology of turfgrass soils. He countered claims that are often found on the internet about how inorganic fertilizers and pesticides can sterilize soil. Research has found inorganic fertilizers actually increased microbiologic numbers. Fungicides did the same, as it was found they had little non-target activity on other microbes. Next, Dr. Soldat presented facts about biologic soil additives and whether they can improve soil microbiology and growing environments. It's all about the numbers. There are about 50 billion native microbes in a tablespoon of soil. Commercial soil additives like compost teas, humates, mycorrhiza, hormones, bacterial additives, etc. claim to increase biologic activity in soils. The net result is you may be adding 1 compost tea microbe per 250 million native microbes per application. He mentioned if you still want to use these products, do the plywood test to observe differences in turf color or quality between a sprayed and non sprayed area. That is, lay down a sheet of plywood when you are spraying your product. The area under the plywood will not receive any product and can serve as a comparison against the sprayed area.

Dr. Geunhwa Jung from the University of Massachusetts and formerly UW-Madison was next to take the podium. His subject was fungicide resistance. He talked about the cause of resistance and how to prevent it. The best way to prevent resistance is to rotate between different fungicide families. Tank mixing different fungicide chemistries can also improve efficacy and the time it takes to develop resistance to a given fungicide. He said once resistance occurs it may take many years before that fungicide can ever be used effectively on your property again.



Top: New UW-Madison turfgrass science professor Dr. Paul Koch presented on control and management of rust disease

Middle: Dr. Doug Soldat informs the audience about microbiology of turfgrass soils

Bottom: Dr. Geunhwa Jung from the University of Massachusetts paid a return visit to talk about fungicide resistance in turfgrass

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NOTES FROM THE NOER







Top: Dr. Chris Williamson talks about insecticide management options for emerald ash borer

Middle: Bruce Schweiger gives a year in review and the road ahead update about the UW-Madison Turfgrass Diagnostic Lab

Bottom: Dr. Ed Nangle from the Chicago District Golf Association presents on shade: causes, impacts, and fixes

Dr. Chris Williamson came next and his subject was insecticide management options for Emerald Ash Borer (EAB). Basically he said ash trees can be saved with chemical treatments. Several insecticide treatments are out there. Their residual activity length is reflected in different product cost. One product has been observed to work up to five years. The best time to apply treatments is spring rather than fall. That allows time for uptake of pesticide into the tree and before insects start to feed. His opinion was that removing all ash trees, which many communities have elected to do, is uncalled for. It's neither a good economical or environmental solution to the problem. One attendee asked, "Will the polar vortex or extremely cold winter of 2013/14 kill EAB larvae? Chris's answer, "No".

Next came a wonderful lunch and time to catch up with fellow participants. Starting right after lunch, TDL manager Bruce Schweiger gave a recap of the program's activities in 2013 and shared some plans for the future. He and Dr. Koch plan to greatly improve information transmittal through Twitter, Facebook, and a new TDL Website. There were lots of new electronic interactions in 2013 from the TDL but the future stands to grow exponentially. Bruce also mentioned that you can vastly improve your value within your company or to your customers by developing your electronic communications. He said that although most of you don't often acknowledge it, you know more about turf management than almost everyone. Many of your customers or club members would love to hear your opinion about when to fertilize, what to do after a drought, whether or not to aerate, or how to grow grass better in the shade. They also would love to see progress on how a certain reconstruction project is going. This could be done by starting your own website, twitter account, or blog.

Hopefully you attended Research Day this year because you could have increased your knowledge of many fascinating subjects, including that of our next speaker Dr. Ed Nangle of the Chicago District Golf Association. His subject was Shade: Causes, Impacts and Fixes. His message was light drives growth. Light itself has a range of properties. Different wavelengths are better for photosynthesis. Unfortunately for turf, trees gather the more valuable wavelengths and leave poor quality wavelength for the underlying turf. Thinning the tree canopy or removing trees can improve light. Altering nutrient levels and nitrogen source can improve turf when forced to grow grass in the shade. Other techniques to improve turf quality when growing grass in the shade are to root prune trees or improve air movement with fans. An audience member asked if morning light is better than afternoon light. Dr. Nangle said morning light is better because it brings about earlier drving.

Another new PhD recipient from the UW-Madison Department of Plant Pathology, Dr. Renee Rioux spoke at conference. Dr. Rioux's subject was 'What's up with Dollar Spot? New Insights on an Old Foe.' First off, she said plant pathologists will soon be renaming the dollar spot organism because it's been recently found to not belong to the sclerotinia family. More pertinent though, she addressed where dollar spot comes from. She found there can be somewhere between 10 and 30% winter survival of the previous year's dollar spot. She also found that dollar spot doesn't survive well in soil and its survival rate changes annually. A larger finding was that dollar spot is likely coming in on new seed. Future research should definitely be aimed at reducing new seed contamination.

Nearing the end of the conference, Dr. Jim Brosnan from the University of Tennessee was broadcast in via the internet. He gave his talk from his office in Knoxville. Amazing the technology! He talked about new herbicides and strategies for weed control. Several of the products he talked about were PoaCure, Pylex, Tenacity, Xonerate, Defendor and others. He talked about timing, rates, repeat applications, tank mixing, target weeds, and sensitive species and varieties. There was too much information to report in this article. Always remember, a pesticide label is your guide to using pesticides safely and effectively, so read the label. One question came from the audience about PoaCure, "Because it works so well, do you think resistance will occur?" Dr. Brosnan's answer was yes.

NOTES FROM THE NOER

Another new PhD from the UW-Madison's Nelson Institute for Environmental Studies was the last speaker at Turfgrass Research Day. Dr. Mark Garrison spoke about the carbon footprint of turf maintenance. He research analyzed different practices used in lawn care, namely mowing, fertilization, and irrigation. He looked at nitrogen sources and the carbon footprint they left. For instance, urea has a high carbon output because when it breaks down, lots of C is emitted. But then compare that to organic fertilizer which has a low carbon output. And when you compare, consider the C output in transporting the fertilizer. The transportation carbon output to ship 1,000 lbs of nitrogen in the form of organic fertilizer is massively larger than shipping 1,000 lbs of nitrogen in the form of urea. 1,000 lbs of nitrogen as urea weighs 2,167 lbs compared to 1,000 lbs of nitrogen as organic fertilizer weighs 20,000 lbs. That's almost 10 truckloads to 1 truckload to transport the same amount of nitrogen. Dr. Garrison presented other interesting data comparing C output between electric and gas mowers and also showed why irrigating lawns can be one of the larger C output practices in lawn care. Some of his conclusions in analyzing the data about lawn care were:

• Lawncare's C output is similar to other household items like running a computer or refrigerator.

• Electric and gasoline engines have comparable emissions when considering C output to produce the energy. This is largely variable throughout the country.

• There are more emissions from transporting fertilizer than in producing it.

WTA Turfgrass Research Day was another success despite the weather. The planning committee of Drs. Soldat and Koch, and Bruce Schweiger, Audra Anderson and Monroe Miller should be commended. The generous sponsors that helped bring you Turfgrass Research Day 2014 should also be thanked. Please show these sponsors, listed here, your gratitude for supporting quality education. And thank you speakers, both near and far, for all your efforts.



Scholarship recipients Adam Wepfer (Egon Herrmann Scholarship), Ben Luedtke (WTA/James Huggett Memorial Scholarship), Luke McGhee (WGCSA/J.R. Love Scholarship), pictured with major professor Dr. Doug Soldat





Top: Another recent PhD recipient from the Department of Plant Pathology at the UW-Madison Dr. Renee Rioux talked about her new research findings in the management of dollar spot

Middle: Dr. Mark Garrison, Nelson Institute for Environmental Studies spoke on the carbon footprint of turf maintenance



A January Thaw?

By David Brandenburg, Golf Course Manager, Rolling Meadows Golf Course

Happy New Year and the best of thoughts to you and your family, friends and businesses. January provides time for reflection on the past years successes and challenges while planning for the new year.

It is a time for those in the Midwest to relax and enjoy some normal work hours and perhaps that vacation that aludes us during the golf season. For those in the golf industry January often serves as our "thaw" or time to relax and rewind from the year past.

As I finish this issue on the 28th of January I can safely say we in the Badger State are not getting an metorlogical January thaw. in 2014. Outside of one or two warm days the winter has been cold and unforgiving. Plenty of monings of below zero temeratures and widespread school closings not for snow but due to polar vortexs and wind chills dipping to 50 below zero or more.

In some areas of the state ice fisherman are forced to put extenstions on their ice augers in order to through the ice to fish.

With the Golf Industry Show around the corner we are due for some warm days to accompany the longer daylight we are enjoying. February is a short month so not long after that the Spring Business Meeting will be held and hopefully spring will be on the horizon by then.

Have you gotten away from work for your thaw? Perhaps a vacation or even the Golf Industry Show in Orlando to learn new methods and network with thousands of your peers.

If you follow the golf industry at all you cannot be too surprised at the latest course closing numbers from the National Golf Foundation. Closings outpaced openings for the 8th straight year as only 14 18-hole equivelant courses opened while 157.5 closed for a net reduction of 143.5.

According to the January edition of the foundation's Dashboard 66% of the closings were at courses with green fees below \$40. Since 2006 there has been a net reduction of 643 18-hole equivelant courses. This sounds like a lot but it is only 4% of the total peak supply. In the 20 year period from 1986 to 2005 U.S. golf grew by 40% as more than 4,500 new courses were added.

According to Jim Koppenhaver of Pellucid Corporation at their annual state of the industry address although 3.7 million people took up the game in 2013, 4.1 million left. Koppenhaver said "Golfer Attrition is the number one problem we have in the market."

The PGA of America through its Golf 2.0 player development initiative, had projected 28.7 million golfers in 2013 while the National Golf Foundation estimated 27.1. Koppenhaver's Pellucid Corporation was a bit more conservative at 25.7 million but all were high in their estimates as numbers show only 24.1 million golfers played in 2013. A far cry from 2000-2001 when 29.8 million golfers played 518 million rounds.

Fewer golfers, a poor spring and a non-existant fall led to only

462 million rounds being played. That number represents the fewest rounds since 1995 and well below the 10 year average of 492 million rounds.

According to Koppenhaver who gives his report with Stuart Lindsay of Edgehill Golf Advisors, course inventory needs to continue to decrease in order for a equilibrium of inventory and demand to be reached and courses to generally begin to be profitable.

This is fine overall but not if your course is one that either closing or consolodates with another facility leaving you searching for a new place to work.

Good news continues in Central Wisconsin as Mike Keiser has selected the architect team of Bill Coore and Ben Censhaw to design the first Sand Valley Golf Course near Wiscosnin Rapids. The short list of candidates included Tom Doak, David Kidd and Jim Urbina.

Coore and Crenshaw have recently renovated the Donald Ross masterpiece, Pinhursts famed number 2 course. The team will begin routing work this spring with construction to begin in fall of 2014. The Adams County location could open to members in 2016 and to the public in 2017.

Oliphant Companies of Madison will construct the first course on the 1,500 acre site.

I hope to see many of you at the Golf Industry show in Orlandoand the Spring Business Meeting in Fond du Lac. Both are great opprotunites to renew skills and relationships.

Please take to heart the encouragment from President Harrington to attend at least one associaiton meeting this season from the event calendar on page 42. I can attest I have never been to a education or monthly meeting where I have not learned something I can take back to improve our courses operation while having a little fun.

Think spring! V

