Hole Notes

The Official Publication of the MGCSA

Audubon Cooperative Sanctuary Program Revisited



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Thank you annual Exposure Golf Sponsors and destination courses for your support

Hole Notes (ISSN 108-27994) is digitally published monthly except bimonthly in November/December and January/February by the Minnesota Golf Course Superintendents' Association, 10050 204th Street North, Forest Lake, MN 55025. Jack MacKenzie CGCS publisher. Please send any address changes, articles for publication, advertising and concerns to jack@mgcsa.org.



Presidential Perspective

by Erin McManus, Superintendent Medina Golf and Country Club

With summer in full swing and most of the project work behind us, we are looking forward

to some new challenges that face my staff and I this season. ClubCorp purchased Medina Golf and Country Club and we are going to be facing many new and exciting challenges the rest of the season. We host one of our biggest tournaments at the club in early June and we continue events and a busy golf schedule until well after Labor Day. The thought of completely changing payroll, budgets and programs during the busiest part of the season has proved to be a great challenge. What I have learned in my years as a Golf Course Superintendent and as an Assistant Golf Course Superintendent has prepared me for the challenge and my staff and I will keep everything moving forward.

The most important thing I have learned about this industry is that quality golf course superintendents

have the ability to adapt and adjust to any given situation that they may face. They are able to predict the weather, laser level a tee box, fix electrical and plumbing, be a guidance counselor, sell projects and just about do any job that might be required to maintain a golf course. How does a golf course superintendent handle all of the different jobs that they could face in any given day? I have learned in my years working on a golf course that the golf course superintendent has the ability to learn a lot form peers and professionals in many different trade groups. I have been able to build a network of professionals that I can call at any time to help with any challenge that I may face. If I have a computer problem, I have a great friend that is a computer programmer that is more than willing to help. The golf course superintendent network in Minnesota has a great group of Superintendents and Assistant Superintendents that are more than willing to help a fellow professional

when needed.

I did not know what to expect in the transition from working for a Private Country Club to working for ClubCorp. There were a lot of unknown details in the transition and a lot of questions that could not be answered until after the transaction

was complete. The first couple days of working for the new company was kind of a hectic rush getting "fired and rehired" and transitioning all of my staff over to the new company. My staff has kept a great attitude during the transition and has jumped into all of the new programs. We

Assistant Nick Walters makes time for pollinators at MG&CC during a season of transition

as a grounds staff have adapted and moved on with the new company very well. I have been able to lean on my support network and talked to some veterans in the industry to help prepare my staff and I for what we had coming in this transition.

We have a lot of new things coming to Medina Golf and Country Club the rest of the season and we will take on the challenge. I am very thankful to be in an industry with the

support network

that we have and thank all that have given an ear to me over the past couple of months. We are hopeful to get the transition behind us and move on with what has been a very good 2017 golf season. The summer heat is right in front of us and we are hoping for some timely rains and only a couple days in the 90s as

we get through July and August. I hope everyone has a great rest of the summer and I am looking forward to having a great summer of golf.



In Bounds by Jack MacKenzie, CGCS

How do they do it?

Outstanding conditions.
Tidy tee boxes

and service areas, smooth cart path surfaces, manicured and practically weed free fairways, groomed and playable bunkers, manageable roughs and firm and true green surfaces with a cleanly cut and painted cup as a finishing touch.

No, not a high-end private country club, not a middle of the road metro public track, or a posh resort destination. I am talking about the too infrequently considered, hometown and out-state golf course. The recreational summer time port of call for the Kiwanis or Lions Club, the VFW pig roast palace, a local sportsman's organization monthly raffle scramble and the competitive regulation course for

area high school golf teams. The local courses are also host to card groups in the winter, holiday feasts, weddings, funerals, bar mitzvahs, Easter egg hunts, bonfires and an occasional romantic evening walk.

As your Executive Director and facilitator in creating memorable outreach and exposure golf events, I have yet to be dissatisfied with a host club. Certainly the persistent rain at CGCS Norma O'eary's course near the shore of Lake Superior was dampening to say the least...but what a beautiful piece of property with multiple creek crossings. The extreme wet chill of a late fall day didn't impact the fine conditions Jeremy Chmielewski proffered at a recent Badgerland outing. In bad weather and in good, the superintendents and staff at all of our member clubs do an outstanding job providing their guests memorable golfing



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opportunities.

No course comes to mind as being bland or of compromised playability. There was a time that we experienced a closed green due to a recent flood event, but the superintendent had the surface seeded and covered. He also provided a very playable temporary green. Everything within his professional abilities was under control. Quite honestly, haven't we all experienced a similar situation in our turf management careers?

Many design features at our destination clubs have been fantastic and left special impressions upon all who played. While every course had several hallmark holes, and none the "once and done, never to be played again" connotation, there were several golf courses that remain highlights in my mind's eye. Upon 'fast reflection', The Bridges Golf Course in Winona, Luck Golf Club, Interlaken Golf Club, Wild Ridge and The Wilderness

at Fortune Bay each stand out as having a special 'something' that I could relate to on a daily basis. This certainly isn't to slight any course unmentioned...rather the lapse is likely just a skip in my mental time-line as it seems every course is unique unto itself.

Perhaps what has been the most impressive is the consistent and uncompromised quality of golf course produced on a limited budget. With the exception of just a few of our outstate higher-end host tracks, the courses we congregate at are maintained with very small crews and operation budgets that must surely be laced with pixie dust and pure magic as they have been outstanding. Managing 18 holes of preeminent conditions should be reasonable to accomplish on a half million-dollar budget or more and summer crew of over twenty. Cut that O&M number by 75 percent and slash the staff to less than eight, including the superintendent, and you can only imagine and

appreciate what it means to manage a well-conditioned golf course on a shoestring budget.

Taking into account that the recent recession has impacted the whole golf industry negatively and forced a "more with less" mentality, I cannot fathom what our outstate professionals had to suffer through regarding equipment replacement. Yet, upon reflection, I am certain that the support and flexibility of our affiliate base allowed for many clubs to keep their doors open rather than repurpose the property to housing, a corn field or just go fallow.

It wasn't that long ago, well, 34 years, when I cut my 'superintendent' teeth at a small nine-hole private Twin City course. I know great conditions are possible with the utmost of professional dedication and a whole lot of hard work. My budget at the time was \$45,000 annually and that included my salary of 14K. I had an

assistant and two part-time seasonal employees. A bachelor, I had plenty of time to do the odd jobs and I was young enough to carry a line trimmer while cup cutting, riding from hole to hole on a greens mower.

Looking back to those days in the early 1980's, I am pleasantly surprised at what I accomplished on a tight budget. Considering the financial support our host clubs receive today, I am totally blown away with the fine course conditioning the association experiences when we travel outstate. Interesting enough however, I bet all of our member clubs provide the same to their clientele no matter the budget, no matter the day and no matter what group is playing.

Kudos Minnesota Superintendents and your staffs for providing playing conditions beyond reproach for your patrons and the MGCSA. Thank you for opening your doors and sharing your beautiful tracks.

****Your membership dollars at work.****

In early summer of 2016, the MGCSA, on behalf of the membership, gave testimony alongside the Assistant Director of the Minnesota Department of Agriculture to restructure the requirements for golf course pesticide applicators. Together we petitioned that golf course managers are well-versed in all areas of pesticide management and thus highly qualified to apply products following only A&E guidelines. Certification (and recertification) in the other categories was causing unnecessary expense and time in education. This declaration was also endorsed by the University of Minnesota and Joe Spitzmueller of the Fertilizer and Pesticide Division of the MDA.

Final outcome: the House Agricultural Committee changed the verbiage to mandate golf courses only certify and re-certify for Categories A&E. The law was passed by the full house and senate at the end of the session May 2016.

To that end, Winfield United is offering the Pesticide Recertification programing for Categories A&E only.

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Adubon Cooperative Santuary Program for Golf Courses Revisited

History

Like other "Audubon" organizations, Audubon International takes its name from John James Audubon (1785-1851), the world-renowned ornithologist, naturalist, and artist.

In 1987, the Audubon Society of New York State was born, or perhaps more accurately, reborn. First established nearly 100 years earlier by conservation giants Theodore Roosevelt, Frank Chapman, and John Burroughs, this original Audubon group from New York ceased meeting by the mid-1930s. Nearly five decades later, Ronald G. Dodson re-instated the charter as a 501(c)(3) not-for-profit under a broader banner of environmental education and sustainable resource management. Very quickly, the reach of the environmental education and certification programs designed to help further that mission expanded beyond New York.

As a result, in 1996, the organization began doing business as Audubon International to better reflect the true scope of its operations. Audubon International is still incorporated as the Audubon Society of New York State. Although we have no formal affiliation with the National Audubon Society or the other 500-plus Audubon organizations worldwide, we work with and partner with many of these groups to promote common goals.

Through education, technical assistance, certification, and recognition, Audubon International facilitates the implementation of environmental management practices that ensure natural resources are sustainably used and conserved. Several of the organization's longstanding environmental education and certification programs have received national awards. Audubon International is able to positively impact environmental health at multiple geographic scales, including individual properties, com-



Fact Sheet

Audubon Cooperative Sanctuary Program for Golf Courses

What is the Audubon Cooperative Sanctuary Program for Golf Courses?

The Audubon Cooperative Sanctuary Program for Golf Courses (ACSP) is an environmental education and certification program that helps golf courses protect the environment, preserve the natural heritage of the game of golf, and gain recognition for their efforts. Through collaborative efforts begun in 1991 with the United States Golf Association, membership in the ACSP has steadily grown to include more than 2,300 golf courses in the United States and three dozen countries worldwide.

How does it work?

The ACSP assists each golf course member to take stock of its environmental resources and any potential liabilities, and then develop a plan that fits its unique setting, goals, staff, budget, and time. Audubon International provides information to help golf course personnel with six key environmental components:

- Environmental Planning
- Wildlife and Habitat Management
- Chemical Use Reduction and Safety
- Water Conservation
- Water Quality Management
- Outreach and Education



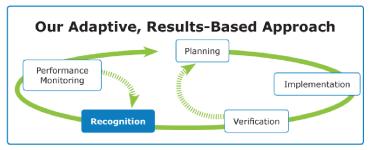
Beatrice Country Club, NE

For more information, please contact:

Audubon International 120 Defreest Drive Troy, NY 12180

Ph: (518) 767-9051 x 115

acsp@auduboninternational.org



Certification

Certification provides an efficient way to work directly with members regarding their unique property while also providing motivation to take action on the key environmental components.

Designation as a Certified Audubon Cooperative Sanctuary is awarded to the golf course upon meeting environmental management standards in each area. Achieving certification demonstrates an organization's leadership, commitment, and high standards of environmental management.

To be designated, golf course personnel develop and implement an environmental management plan and document the results. Recertification is required every three years to maintain the Certified Sanctuary designation.

"The strongest part of the certification process is that it forces us to rethink our methods and manner of conducting business. It challenges our "status quo" by directing our thoughts and actions toward environmental awareness and changes our definitions of responsibility."

- Nancy Miller, Golf Course and Grounds Superintendent, Maple Leaf Golf & Country Club, FL

munities, and ecoregions.

In fact, throughout its history, Audubon International has enrolled over 3,000 properties (including golf courses, cemeteries, ski areas, housing developments, hotels, and many others) and communities in its rigorous certification programs. The organization has been successful due in large part to its successful relationships with a wide range of interested partners, including small businesses, large corporations, academic institutions, fellow not-for-profits, community associations, local governments, and state and federal agencies. Since 1991, the United States Golf Association (USGA) has served as a strong supporter of Audubon International's



Our Core Beliefs

- The healthy functioning of our planet's ecosystems—our air, water, and land, and the vast diversity of life on Earth—is worth preserving.
- There are places on Earth where human activity should be limited.
- Maintaining healthy and functioning ecosystems begins at the local level with policies and practices that protect watersheds, promote biodiversity, and sustain natural resources.
- Not only must people take steps to minimize negative impacts to the environment in human-dominated areas of the world, but also strive to enhance the health and functioning of ecosystems where we live.
- Finding a sustainable balance among environmental, economic, and social systems is key to sustaining the quality of life for all of Earth's inhabitants. Our human communities can and must be balanced within the limits of the natural world.
- By becoming good stewards of the environment, people and organizations can help to protect and sustain the land, water, wildlife, and natural resources around them.
- Scientific information, in conjunction with public participation, should be used to guide the planning, design, development, and management of human communities.
- While laws, rules, and regulatory approaches have been, and can be, important
 tools for protecting and enhancing our natural environment (ecosystems),
 voluntary efforts are an effective and essential means to protect and enhance the
 natural environment as well.
- Effective collaboration and partnerships among nonprofits, governments, businesses, and the public can lead to better environmental decision-making and can improve the quality of our human and natural communities.

sustainability efforts in the golf industry, and this has included providing over \$2 million in financial support to offset fees associated with administering the Audubon Cooperative Sanctuary Program for Golf Courses.

Audubon Certified Courses in Minnesota:

Baker National Golf Course
Birnamwood Golf Course
Braemar Golf Course
Columbia Golf Club
Dacotah Ridge Golf Club
Dwan Golf Course
Gross National Golf Club
Keller Golf Course
Legends Club
Meadowbrook Golf Club
Minnesota Valley Country Club

Somerby Golf Club
Somerset Country Club
Superior National at Lutsen
The Minikahda Club
The Wilderness Golf Course at
Forune Bay
Theodore Wirth Golf Course
Town and Country Club
TPC Twin Cities
Wayzata Country Club
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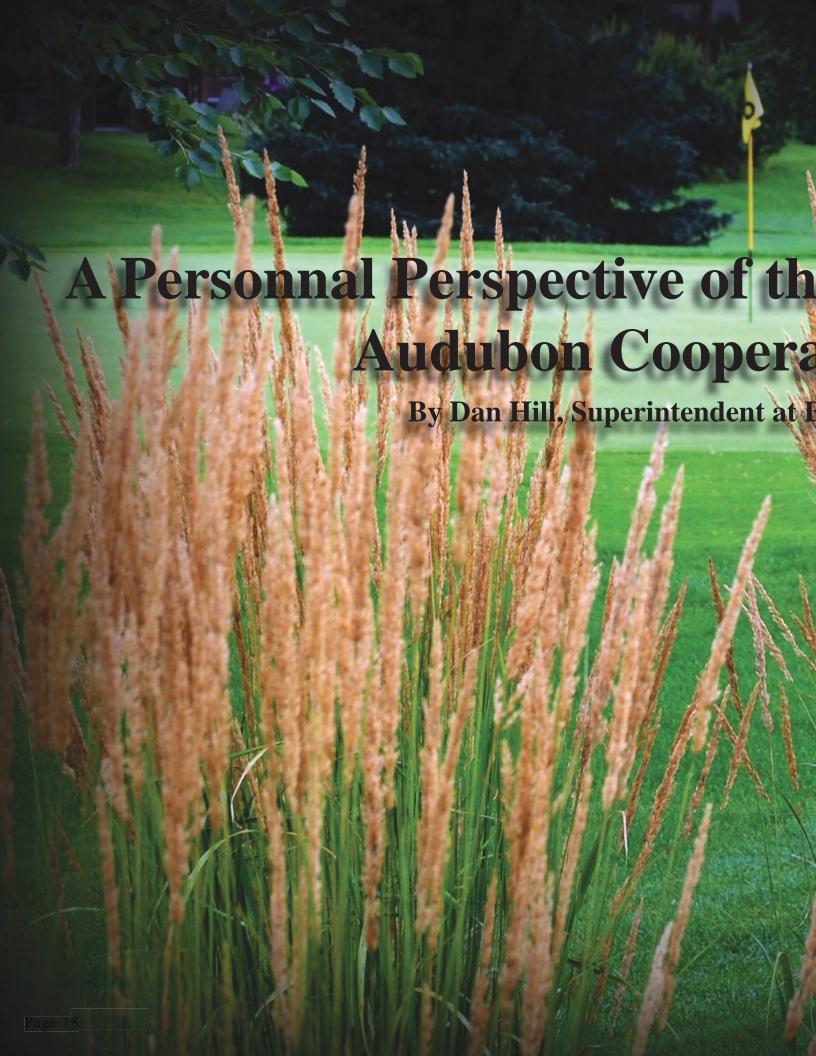












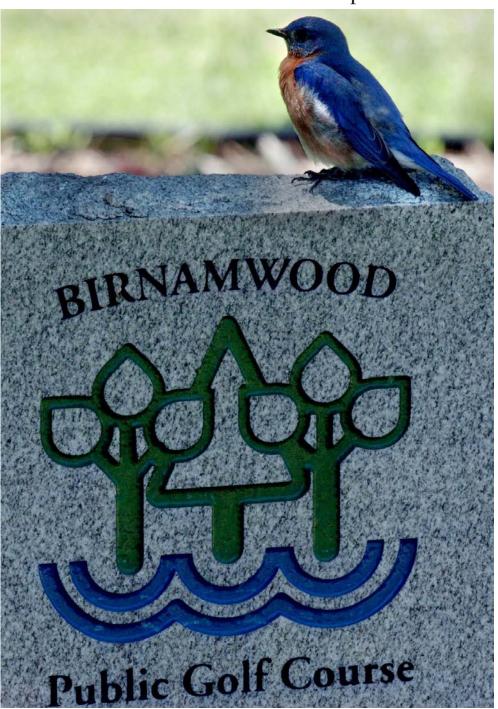


I came to Birnamwood in January of 1999 from Minnesota Valley Country Club where I was Assistant Superintendent to Larry Mueller. He taught me a lot about the turf industry. Larry is a great teacher, and I was privileged to have had an opportunity to work with him. I grew and learned more in that time than any other schooling or work experience in my career.

One area in particular that Larry got me interested in was his involvement in the Audubon International. He was the first superintendent

in Minnesota and the sixteenth in the nation to get his course fully certified as an Audubon Cooperative Sanctuary.

When I left Minnesota Valley and took this position, I saw a great opportunity to transform Birnamwood into an Audubon Cooperative Sanctuary. It became my goal to show people that you do not need to be an exclusive 18 hole course with a huge budget to become certified. Birnamwood was the fourteenth golf course in the state to become fully certified, and the smallest course





in the world. I believe that any course, if they put the effort into it, can become certified. If you have the desire to improve the environmental quality of your course and the \$200.00 for your annual dues, you can begin the process to become an Audubon Cooperative Sanctuary.

My club participates with the CACS because I think, environmentally, it is the right thing to do. One benefit that I did not expect to get out of becoming a Fully Certified Audubon Cooperative Sanctuary is the amount of free advertising we have received over the years from local papers and magazines. It is not the reason I do it, but it is a nice benefit.

Many of the things that the Audubon asks applicants to do are things that most superintendents are already doing. Documentation is probably the most essential part of the Audubon program. Although the amount of paper work seemed overwhelming at first, I grew to enjoy the process. Being forced to look at some details of the course, that I previously paid little attention to, has proven beneficial to my operation and me. I now know my course on a closer level. It seems that most superintendents know all the details about their greens, tees and fairways, but spend little time thinking about their woods, wetlands, wild areas and ponds. This is where the Audubon can help.

Being involved in the Audubon does not cost very much and in many cases saves money. Even though we only have 21 ½ acres to work with, we were still able to find over 2 ½ acres to turn into natural area. 19 years of not mowing, irrigating, fertilizing, and using herbicides on these areas has saved a lot of money. Not only are these areas maintenance free, but it dramatically improves the esthetics of the course.

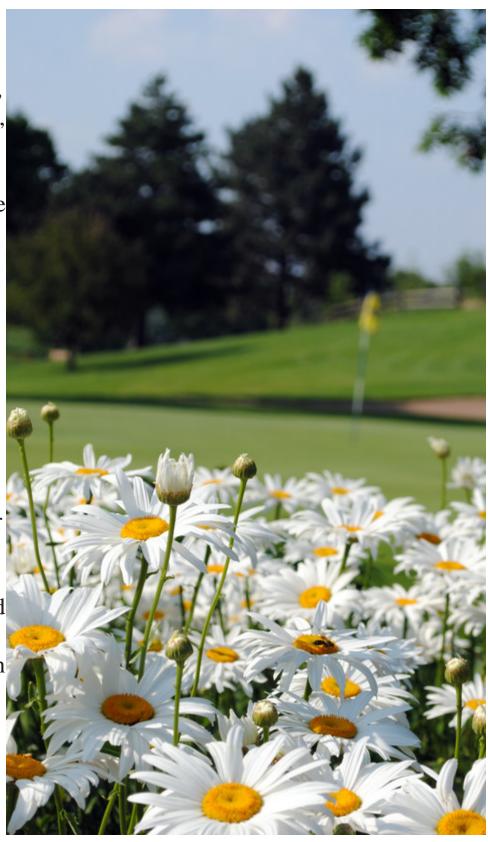


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The community, as a whole, recognizes the program by: Volunteering at the course. We have had numerous people come volunteer at the course over the years to help with everything from monitoring our bluebird houses, planting gardens, planting trees, and removing buckthorn.

Certification plaques hung in the clubhouse. Presentations to schools, local community groups, and Parks and Natural Resource Commission The signage on every tee box describing the environmental achievements on that particular hole. Community newsletters featuring Birnamwood Golf Course.

One thing that I found very interesting was how much the staff enjoyed the process. Their involvement in the Audubon gave their job more meaning. They had a goal to achieve and worked together to reach it. They took as much pride in passing each of the five Audubon categories as I did.





Roger Stewart CGCS Retires Thanks for your Support!

























Best Wishes to you Roger



























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BCCC, Ready for the Wee One by Tom Proshek, Superintendent at Brackett's Crossing Country Club

Once known as Honeywell Country Club, Brackett's Crossing Country Club was planned, developed and managed by the non-profit organization known as Minnregs, Incorporated. The Minnreg Organization was originally made up of male-only employees of Honeywell Inc. The financial support originally came from the receipts of vending machines used by the employees located in the various Honeywell plants and offices in the Twin Cities area. Times have changed with the development and expansion of what is now known as Brackett's Crossing Country Club.

1960- Four hundred and sixty acres located in the Village of Lakeville was purchased for the purpose of building a recreational center and

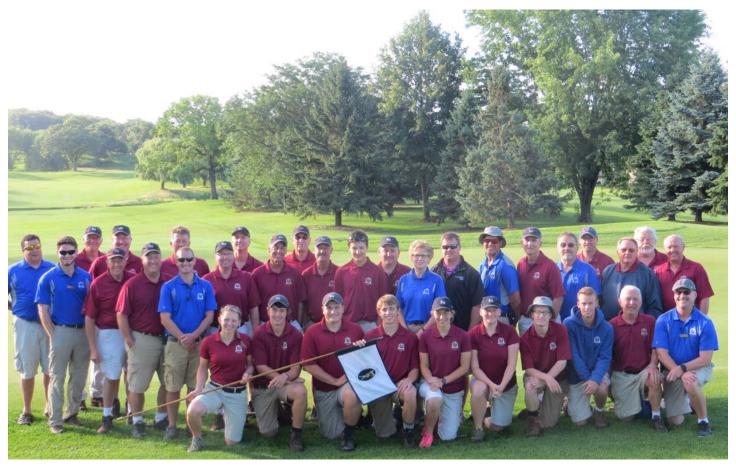
a country club. The Minnesota Vikings officially became a professional football team in 1960.

1964- The golf course was opened to all Honeywell employees and their families who purchased golfing memberships. The course was designed and built by Harrison, Brauer & Ripple and originally used the Lakeville VFW as its clubhouse, which was moved to the golf course and located south of the current clubhouse next to the tenth tee. The Boundary Water Canoe Area gains new protections under the federal Wilderness Act in 1964.

1970- The Minnregs paid to have a gravel road installed between Judicial Road and Highway I-35. This road was paved in the late 1970's. Mary Richards throws her hat into the air on the Nicollet Mall, and a TV. Comedy is born. Mary Tyler Moore, "turns the world on with a smile" for seven years from 1970 until 1977.



From the club house patio, the ninth green and logo is a perfect backdrop for any event.



A well-tuned staff can make a big difference. Here the BCCC Green Staff takes a photo break following the successful Hickory Stick Tournament.

1981-1982- Honeywell leases the club to private operators who change the name to Brackett's Crossing to honor early Lakeville settler J.J. Brackett. Apparently Mr. Brackett frequently crossed over the land on a trail used for mail service between Lakeville and Prior Lake. The general location of the trail still exists behind the 10th green. The Hubert H. Humphrey Metrodome is opened on April 3, 1982.

1993- The Club is purchased by current owners Tom and Peggy Smith. Since their arrival the golf course and clubhouse have experienced many positive reconstruction projects. Brackett's Crossing maintains it's private status, however the banquet facilities are open to the public. The Minnesota Lottery is initiated and state receives a visit from Soviet leader Mikhail Gorachev.

A whole lot can happen over the course of 53 years, but there is one

constant in the community of Lakeville, Brackett's Crossing Country Club, a destination for family golf. This fine club is also playing host to the 2017 Minnesota Wee One Foundation Golf Event on October 9th (5th year at our club). The Wee One Foundation was developed as a tribute to Wayne Otto to assist golf course management professionals (or their dependents) who incur overwhelming expenses due to medical hardship without comprehensive insurance or adequate financial resources. As a profession we have taken steps necessary to support our own in cases of emergency and need.

Tom Proshek, Superintendent at Brackett's Crossing for the last 23 years is looking forward to the event. Proshek began his career 36 years ago at New Prague Golf Club followed by a grow-in stint at Wildflower Golf Course. According to Tom, all the staff from the Golf- Shop to the Administrative office are ready and welcoming the group for a fantastic fundraiser at a great venue.



Proshek and his professional management team of Head Mechanic/Assistant Ken Adams, Assistants Mark Schmitz and Nick Ryan, second Assistant Larry Enwall and spray tech, Don Bonrud, Head Gardener Cindy Diegnau, all have a combined tenor at the club of over 75 seasons. All those years add up to a well-maintained 18 hole golf course stretching to 7159 yards from the "tips" and 6,603 for the Wee One Tournament.

Agronomically, Brackett's Crossing has its challenges. The property sits upon old farm and swampland with a heavy rock and clay profile that does not drain well even in the best of seasons. Frost heaving accentuates the issues and annually changes drainage patterns even more. Fortunately for Tom and his crew, the club's owner understands soil dynamics and the need to be continuously maintaining and improving the surface and subsurface drainage patterns for better playing conditions.

The toughest hole? Number 10, according to Tom, "It is a slight dog



leg right, par four with water on the left and OB to the right of the landing area". Without a well-positioned drive, you will be left with a long iron into a well-protected green that is slightly elevated. Due to some of the previously mentioned drainage challenges, the 10th hole was re-built 5 years ago by Hartman Companies, which remedied a few moisture issues and sod with LMB (low mow midnight bluegrasses). The easiest is number 6, a short par four drivable by the real long hitters.

The trickiest hole? Number 4 is a long par four that plays slightly uphill and dog legs to the right. "Again, with aid of Hartman Companies, we rebuilt this hole, correcting drainage issues and created a golfer friendly hole (eliminating the blind shot) and also sod with LMB". A long, precise tee shot needs to hit the angled fairway otherwise deep rough on either side will make hitting the second shot into the green a bit challenging".

The 2017 Wee One Event is shaping up to be a great fundraiser. Two



on-course food stands (hole 6 taco stand, hole 14 brat stand and hit the rock game), along with a superb buffet dinner, raffle prizes valued at over \$3,000, a purse over \$1,500, camaraderie and most important of all, support for "one of our own".

2017- The Wee One Event. It wouldn't be the same without you. See you on October 9th. The MGCSA/Wee One Event are looking forward to seeing each of you on this great Oct day:-)



The MGCSA extends a grateful "thank you" to Tom Proshek, his green staff and Tom and Peggy Smith for hosting the Minnesota Wee One Tournament. Their support has made this fund raiser a "can't miss" opportunity for the turf management community.



One Cause. One Goal. One Percent.

One Cause: Help golf course management professionals and their dependents that are having trouble paying medical bills due to the lack of comprehensive insurance or adequate financial resources.

One Goal: Raise \$10 million in 10 years to support these families.



The MGCSA Central Exposure Golf Event







































Duininck Facility Tour Hosted by Judd Duininck Duininck Golf





















Thanks for the tour and dinner

Precision Disease Management: The Wave of the Future?

By Dr. Paul Koch, UW Madison

Modern disease management encompasses a wide array of cultural factors such as proper fertility, irrigation, traffic management, air movement, sunlight penetration, mowing height, and traffic management. But in most cases, especially with a disease like dollar spot, cultural practices alone are not completely effective at managing disease. Hence, fungicides are often required at multiple points throughout the year to adequately suppress disease. Traditionally, fungicides have been applied at regular intervals throughout the growing season to the vast majority of putting greens, fairways, and tee boxes on any given course. However, increased regulatory and social concern surrounding pesticide usage and ever tightening budgets make developing more efficient and precise means for pesticide application scheduling necessary for effective disease management in the future.

For the basis of this article, I will define precision disease management as using the minimum

amount of pesticide required to control a particular disease. In my opinion, precision can be increased through two primary ways; 1) only applying pesticides WHEN they are required and 2) only applying pesticides WHERE they are required. Let's look into each one of these aspects in a little more detail.

The When: Using Disease Predictive Modeling For Improving Precision

Currently most superintendents use a mixture of models, soil temperatures, indicator areas, and gut instinct for properly timing fungicide applications. These methods have worked relatively well for a number of diseases like take-all patch, fairy ring, and summer patch. However, models developed for dollar spot fungicide timing have been mostly ineffective, either instructing the applicator to apply more than they would when using a strict calendar-based method or applying too little and leading to widespread

disease outbreaks. However, a new model developed mostly by Damon Smith while he was a professor at Oklahoma State (Dr. Smith is now an assistant professor at UW-Madison working on row crop pathology) and with assistance from Jim Kerns when he was at Wisconsin is providing a more accurate picture of when dollar spot is most active and

in need of a fungicide application. This 'Smith-Kerns Model' has been effective in our research, and we anticipate it will be a critical piece of precision dollar spot management strategies in future years (Figure 1). The Smith-Kerns Model uses a 5-day rolling average of air temperature and relative humidity to calculate a probability that dollar spot

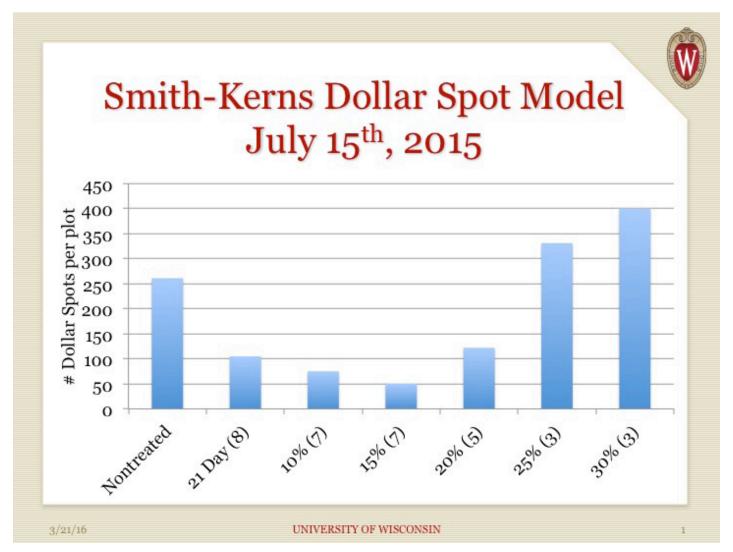


Figure 1: Dollar spot severity when fungicide applications were made according to five different Smith-Kerns dollar spot probabilities. The number in parentheses following each treatment is the number of Banner MAXX (2 fl oz per M rate) applications made over the course of the 2015 growing season.

will occur on any given day. When the probability reaches a certain threshold, a fungicide application is made and the model can be ignored until the reapplication interval has expired. While the other pieces of the superintendent's fungicide application strategy cannot be ignored (indicator areas, instinct, etc), an effective dollar spot model can provide further guidance on when is an optimal time to spray and improve the precision of dollar spot management.

The Where: Using Modern Technology to Only Spray Where the Diseases Are

One of the reasons that models have not been as effective in turf as they have been in many agriculture settings is the various microclimates that exist on any given golf course. A green tucked away in the woods will usually have a much higher level of disease pressure than one out on an open ridge due to reduced air movement and higher humidity surrounding the green in the woods. So a model predicting one level of disease over an entire golf course will either underpredict the amount

of disease on the high-pressure site or overpredict the amount of disease on the low-pressure site...or both! This means that using a model to predict disease at a single site will recommend too much fungicide for some areas of the course and too little for others.

So how do we get around this conundrum? The most straightforward way would be to predict disease probability at different spots around the course and schedule fungicide applications on a site-by-site basis. This would require simple weather stations to be installed around the course that would wirelessly transmit their data, and the disease probability for that site, to a central computer. In the past this would have been an inordinately expensive process, but with the decreasing cost and increasing ability of many current weather stations this is no longer outside the realm of possibility with just a few more technological advances.

University Ridge: A Case Study

To illustrate how this might work at an actual course, let's use our venerable University Ridge



Figure 2: This picture of the 5th and 6th holes at University Ridge show the relatively open, prairie-style design of the front nine. Disease conditions would be generally predicted to be lower on the front nine relative to the back. Picture from University Communications (photos.uc.wisc.edu).

golf course as an example. Most of you are familiar with the course and know that the front nine is relatively open and trees are tight to play in only a few areas (Figure 2). However, once the turn is made to the back nine most holes are completely lined with trees down both sides and many putting surfaces are completely surrounded by dense forest (Figure 3).

From our recent discussion, we know that the back nine greens are most likely going to experience higher disease pressures and will likely require more fungicide to provide adequate disease control than the front nine. But just one weather station on

site won't be able to tell the difference between the two environments, not to mention the various different microclimates that occur even within the back nine greens. The result is that all 18 holes will often get sprayed even though half or less will actually need it.

However, if they installed small weather stations on each putting surface (or fairway) over the entire golf course and used our Smith-Kerns dollar spot model to predict when each hole had conditions favoring disease we could more precisely pinpoint our fungicide applications to only the holes that need it...and in the process save money and time without sacrificing turfgrass quality.

The Tools Needed to Make This A Reality

As you have probably guessed, we don't quite have the tools to make this happen...but we're also not that far off either. First, we need



Figure 3: This picture of the 10th hole at University Ridge shows the densely forested nature of the back nine, which generally has higher levels of disease pressure relative to the front. Picture courtesy University Communications (photos.uc.wisc.edu).



MGCSA Southern Reinders Exoposure Golf Event Interlaken Golf Club Host Bill Brooks































Figure 4: The Hahn Spray Bug sprayers are already in use at many golf courses around the country, and they have additional applications in the realm of precision disease management.

an effective model for not only dollar spot but also all of our other common turf diseases. While we are continuously refining and improving our dollar spot model, development of additional models for other common diseases is needed. Second, we need the weather station technology and data management software to assess the local environmental variables, plug the numbers into an algorithm, and present the disease probability. This part is (for the most part) already available, as small weather stations like Toro's Turfguards and other stations from Spectrum and Campbell Scientific are available or will be in the near future. As the cost of these stations continues to drop, I don't think it will be financially impractical to install a weather station on every hole

Third are the tools to effectively and efficiently spray pesticides over a small area. Right now our sprayers are designed to spray multiple acres, and spraying only a few hundred thousand square feet is oftentimes overly burdensome. But current technologies like the Hahn Spray Bug are already available and in use at courses around the country (Figure 4), and future technologies such as spraying by drone have already

started to appear in agriculture and are ideal for small, precision sprays that are often needed in turf (Figure 5).

The good news is that many of you are already familiar with precision turf management in the form of your Spectrum TDR Moisture Probe. These widely used devices give superintendents immediate feedback on the moisture levels all around the golf course, and have al-



Figure 5: Drone pesticide sprayers are being developed for agricultural purposes and may provide ideal for small, site-specific applications in turfgrass.

WINFIELD UNITED

The MGCSA Northern Exposure Golf Event













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For the Strongest Turf

















Thank you Affiliate Members for your continued support of the MGCSA

lowed them to develop site-specific irrigation plans that have significantly cut water usage and actually improve the conditioning and playability of the golf course. While additional disease management efficiencies will undoubtedly be developed in the coming years, the strategies outlined above may finally help to bring some of the efficiencies

currently employed in other areas of course management to the forefront in disease management.

Authors Note: This article originally appeared in the May/June 2016 issue of The Grass Roots.

The MGCSA wishes to extend a "thank you" to Dr. Paul Koch and his staff at the University of Wisconsin, Madison. Last April the MGCSA Board of Directors and the Research Committee sent Requests For Proposals to three area institutes of higher education in an effort to enhance pathological research relevant to your management practices. Dr. Koch stepped up to the plate immediately to provide additional support materials for the MGCSA magazine Hole Notes and reinvigorated his relationships with Dr. Brian Horgan and Dr. Eric Watkins at the University of Minnesota.

Announcing the MGCSA and Par Aide 2017 Legacy Scholarship Recipients

This year the MGCSA and Par Aide are pleased to award two, \$1,000 MGCSA Legacy Scholarships, to Kaiji Eckholm and , a \$1,500 Joseph S. Garske Legacy scholarship to Quinn McDonah and a \$1,500 Garske scholarship renewal to AnnMarie Backstrom.

The Legacy Scholarship

The Minnesota Golf Course Superintendents' Association offers a Legacy Scholarship program designed to assist children and grandchildren of Class AA, A, SM, C, D, Associate and Affiliate members. The MGCSA provides scholarships to students attending college or vocational programs at any accredited post-secondary institution. The program is independently managed by Scholarship America, a national non-profit student aid service organization.

Winners of this year's MGCSA Legacy Scholarships are:

Kaija Eckholm is the daughter of E. Paul and Renee Eckholm. Paul is an affiliate member with Arteka Companies. Kaija is currently enrolled at the University, majoring in Kinesiology.

Maggie J. Traver is the daughter of Rick and Barb Traver. Rick fulfills the dual role of superintendent general manager at Monticello Country Club in Monticello. Maggie is currently enrolled at the University of Minnesota, Morris, where she is pursuing a degree in Psycology.

The Joseph S. Garske Legacy

The Joseph S. Garske Legacy award, named after the founder of Par Aide Products Company, Joe Garske, is committed to further the education of children and grandchildren of MGCSA members through financial contributions. This is the 20th consecutive year for these awards. Par Aide is located in Lino Lakes, Minnesota and owned by

Steve Garske, son of Joseph.

The late Mr. Garske, who died at the age of 76 in 1982, started Par Aide in 1954 with plans to make a "good" ball washer. A foundry man and avid golfer, he knew little about the



golf business, tried to sell his ideas for design and tooling to two accessory companies, was turned down by both and so began Par Aide Products Company. Steve Garske started The Legacy Scholarship in his father's honor in 1996.

"I am pleased to have our company provide these scholarships since for many superintendents, providing a college education for their children requires true sacrifice. I am fortunate to have the opportunity and ability to help," Garske said.

"As a long-time member of the Scholarship Committee some years ago, it always bothered me that we had lots of scholarships available for turf students but nothing for the

legacy of current members," Garske said. (Heeding the comments of a long-time Minnesota Superintendent that our committee was working to put him out of a job.) While Steve thought this was a bit of paranoid thinking, it did

make him realize that supply and demand works in this industry as well, and if nothing else, an oversupply of eager new superintendents could definitely undermine salaries. However, it was the following premises that motivated Par Aide to initiate a legacy scholarship program:

1) Many Superintendents are underpaid, in my opinion, and they truly work a labor of love. Sending a child to college is likely a real hard-

ship. These same Superintendents who now have college age children were the very ones who had been so responsible for supporting our company through all the years and had helped us attain our success.

We wanted to thank them. 2) Our founder, Joe Garske, did not have any formal education and was always conscious of that fact. He had quietly supported at least one young man in gaining a degree.

3) There were

lots of turf

student scholarships but few if any Legacy awards."

So it seemed obvious to Steve to initiate a legacy program and it was discussed at numerous scholarship meetings. The problem was how to administer such a program. Suppliers to our industry did not

want to be in a position of judging one potential recipient/customer against another, and Superintendent members were not comfortable with reviewing personal information and making judgments on each other



either. The sponsorship concept lay dormant until we discovered the Citizens' Scholarship Foundation of America, now called Scholarship America, an organization that does nothing but review and award scholarships. It's completely

impartial and considers all information confidential. The MGCSA quickly agreed to accept the cost of administration and the Joseph S. Garske Legacy was born.

The idea was to provide two two-year scholarships to deserving children of current MGCSA Members. This program is thought to have been successful by all and has been in existence since 1996, helping numerous sons and daughters of Superintendents pursue their college education. Par Aide has continued to prosper and as an expansion of its Minnesota program, it now also offers a similar program nationwide through the GCSAA.

Winners of this year's Joseph S. Garske Scholarship are:

Quinn W. McDonah, son of Sean and Patty McDonagh, is the recipient of the Joseph Garske Scholarship. Sean is the superintendent at Roseville Cedarholm Golf Course. Quinn is attending the University of Minnesota, St. Paul Campus, where he is pursuing a degree in business.

AnnMarie Backstrom, daughter of Jeff Backstrom and Caryn Coller, is the renewal recipient of the Joeseph S. Garske Scoholarship. Jeff is the superintendent at Cannon Golf Club. AnnMarie is a graduate of Bethlehem Academy in Faribault and is currently attending the College of St. Benedict in St. Joseph, MN. She is specializing in Environmental Studies.

Congratulations to the winners of the 2017 MGCSA and Joseph S. Garske Legacy Scholarships. Thank you members of the MGCSA and especially Steve Garske for enabling these fine individuals to pursue their dreams and aspirations.





2017 MGCSA Legacy

Kaija Eckholm

Daughter of Affiliate member Paul Eckholm

Kaija (KI-ya) Eckholm, of Savage, Minnesota, graduated with honors from Burnsville High School. Having now completed her first year at the University of Minnesota she has settled into a college routine. Science and mathematics courses are much harder when your fellow students are engineering and science majors. Even with this challenge she was able to make the Dean's List during her second semester.

Kaija has always been a strong student, receiving National Honor Society membership since Junior High. Kaija has a passion for soccer and has been an active participant since a very young age. She has played on state championship club teams at the Premier level and played varsity soccer while in high school. In addition to her playing skills, Kaija has coached youth soccer for the Burnsville Athletic Club. Kaija continues to teach soccer at Left Foot Coaching Academy in Minneapolis. While she would have loved to play in college, playing at a D1 level was not in the cards.

Kaija is contributing to her

Scholarship Recipients

own college education by working as a soccer instructor (mentioned above) as well as working in the garden department of the local Home Depot store. She is so concerned about the cost of her education she took the time to break the cost down to a per class hour cost. She told us it did not make sense to skip class when it cost her \$180.00 per hour.





Kaija has spent many hours volunteering working on activities benefiting children. She taught Sunday school, was a team leader for a church summer program for children and teens and participated in multiple Feed My Starving Children opportunities as well as other child focused events. Kaija is pursuing an undergraduate degree in Kinesiology at the University of Minnesota - Twin Cities and is working towards a PhD in pediatric physical therapy after achieving her undergraduate degree.



2017 MGCSA Legacy

Maggie Traver

Daughter of Class A member Rick Traver CGCS

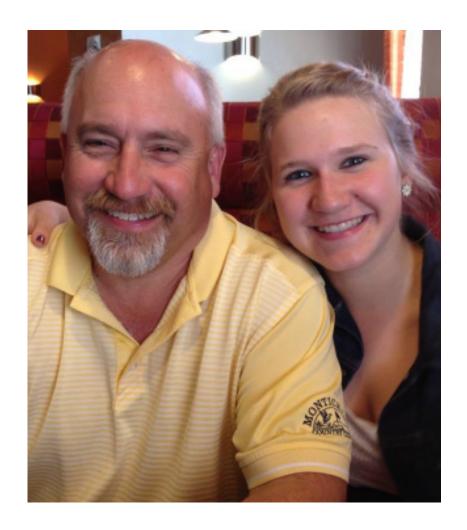
Maggie was a great kid growing up and has certainly turned into a wonderful young lady as she has gone through college. She was a student leader in Fellowship of Christian Athletes, was a Sunday school teacher all through high school, and while at college volunteers as a teacher's aide for Spanish speaking adults learning English as a second language. She was a captain of her high school golf team and has worked at the Monticello Country Club as a maintenance employee and beverage cart person for the last three years. She has always had a volunteering heart and has spent many an evening volunteering at our local nursing home, which is where I believe she got here motivation to work toward a degree in Occupational Therapy. She is currently attending the University of Minnesota, Morris and working on a Psychology degree. Her goal is to then work on her Master's Degree in Occupational Therapy.

She just recently returned from a work study trip to Greece where she was studying about the longevity of people in the blue zones – areas of the world where people live longer and have active lives into their 90'sand beyond. The Work study title was – Aging in Greece – Comparative cultural practices and social policies. Their group spent a lot of time working and visiting nursing homes and hospitals,

Scholarship Recipients

and from talking with her it was an amazing experience for them all. It also sounds like they found a beach or two as well on their off time. My wife Barb and I are extremely proud of who she has become and are excited to see where she takes here knowledge and energy. Thank you MGCSA for this scholarship and feel assured she will put it to good use.







2017 Joe Garske Lega

AnnMarie
Backstrom
Renewal Recipient

Daughter of Class A member Jeff Backstrom

AnnMarie will be entering her fourth year at the College of St. Benedict this coming fall. She worked a couple months this Spring at Cannon Golf Club and now currently works at Many Point Boy Scout Camp near Park Rapids. She is instructing Scouts on how to rock climb. This past school semester she studied in Southern Chile(Patagonia Region). It was a once in a lifetime adventure as she was able to visit many sites and in-

teract with the local people.

After she graduates next spring, her ideal job will be at a national or state park working outdoors interacting with people and the environment. Her other passion is theatre performing, she has participated in performances at St. Ben's and has also done background stage work. Thank you ParAide and the Garske family for this wonderful scholarship.

cy Scholarship Recipients







2017 Joe Garske Lega

Quinn McDonagh

Son of Class A member Sean McDonagh

Quinn McDonagh, is the son of Sean and Patty McDonagh. Sean is the Superintendent of Roseville Cedarholm Golf Course. Quinn will be a freshman at the University of Minnesota Carlson School of Management and will major in Business.

Quinn graduated with honors from Moundsview High School in June, 2017. Quinn can be described as a passionate leader. He served as the Senior Class Officer at Moundsview and was a speaker at his commencement ceremony. Quinn was a member of National Honor Society and Student Council. He was also Vice President of Marketing for

DECA and on the Executive Board for Mustang Mentors where upper classmates at MVHS partner with Freshman throughout the year to smooth their transition. Quinn earned high school letters in all of these activities along with football, hockey, lacrosse and bowling. I am very proud and honored that Quinn was awarded the Hobey Baker Character Award for Minnesota boys high school hockey for 2017. This award is given to a player with exemplary character and sportsmanship.

In addition to all of his school accomplishments and activities,

cy Scholarship Recipients

Quinn served as a Captain of the Explorers program with Roseville Fire Department. One organization Quinn was extremely excited and passionate to be a part of was Youth in Government which is run by the Minnesota YMCA. He participated in "YIG" for 5 years and served twice as the Speaker of the House. Quinn was awarded the Youth Thrive Award in 2017 by the YMCA. Quinn's experience with "YIG" fueled his leadership quali-





ties and his love for politics and public speaking.

As the Superintendent of Roseville Cedarholm Golf Course for 32 years, I am very appreciative to Par Aide and Steve Garske for providing and maintaining this Legacy Scholarship. I am so honored that Quinn was chosen for the Joseph S. Garske Award.

My wife and I have been so impressed with Quinn's desire to be involved in a variety of school and community organizations and can't wait to see where his passion and leadership skills take him as he heads to the University of Minnesota-Carlson School of Management.

Within the Leather

by Brian Boll North Oaks Golf Club

As I think back about my first years as a Golf Course Superintendent, I can't help to think how I have been in a similar position before in my life. It has to do with memories of a classic car while I was growing up. It might be a little stretch, but I hope you bear with me.

In 1986 (I was in third grade)
my father purchased a gold 1966
Pontiac Catalina convertible. It
is a huge piece of American
manufacturing, the type of car that
can easily sit four abreast. I still
remember the proud smile on his
face when he drove it home for
the first time. I am the youngest
of three boys, and we couldn't
be more excited for him and us,
as our thoughts turned to the
chance to drive it as we got
older.

During the next few years, my father worked on the vehicle and updated it to have it run better, but was cautious to keep its heritage and maintain it

as the classic it is. Some projects were cosmetic; others were to repair some of the original infrastructure that degraded over time. He had a list of updates, prioritized them, and worked through the list over two decades.

Fast forward to my high school days at Woodbury High School. I turned 16 in January of 1993. My first months driving the family minivan were in the challenging winter driving conditions of Minnesota. That spring my father and I took the convertible out for the first cruise of the year. He drove east to the St. Croix River and we spent the afternoon taking in the beautiful scenery meandering our way along the rolling hills. In Afton, we stopped and he gave me the keys to get us home. For years I spent dreaming of this day, and I couldn't believe it was finally here. The ride home was great, that boat of a car seem to float on its way home.

In time, I was allowed to take the Catalina myself and cruise with friends. I remember the nervous excitement. I was so scared to damage anything on the car but

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it was so cool to be able to drive it. I would slow down when the road conditions were poor and was quick to get it home and in the garage when the skies looked ominous. When the roads were

clear and smooth, I carefully opened it up and saw what the V-8 under the hood could do. At the end of the day, I always knew I had to park it no worse for the wear, ready for the next time out.

a drive in the "Hot Rod" as he calls it. I also made a list of updates to the vehicle, prioritized them, and am working through the list as time and money allows.



Well, that gold 1966 Pontiac Catalina convertible sits in my garage today. How I ended up with it and my brothers did not is story for another time, let just say I'm bigger. I enjoy early evening cruises with my family along the Mississippi River and the farmland surrounding Elk River. Sometimes, just my son and I sneak out just like I did with my father, taking

I hope to stay true to the heritage of the vehicle and maintain it as the classic it is.

Rather than spelling out all of the correlations, I will leave you with this. I thank the membership of North Oaks Golf Club for the chance to drive their classic over the past seasons and hope to have the opportunity for years to come.

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