

(Continued from page 19)

They include these:

- Molinia caerulea* 'Variegata' variegated moor grass
- Acorus gramineus* 'Variegatus' white-striped Japanese sweet flag
- Hakonechloa macra* 'Aureola' golden variegated hakone grass
- Deschampsia caespitosa* 'Fairy's Joke' fairy's joke tufted hairgrass
- Phalaris arundinacea picta* ribbon grass, gardener's-garters
- Carex* 'The Beatles' 'The Beatles' sedge, mop-headed sedge
- Miscanthus sinensis* 'Morning Light' 'Morning Light' Japanese silver grass
- Sorghastrum nutans* 'Sioux Blue' 'Sioux Blue' Indian grass
- Pennisetum alopecuroides* 'Moudry' black-flowering pennisetum
- Elymus racemosus* 'Glaucus' volga wild rye, Siberian wild rye

A golf course superintendent from Wisconsin's Northwoods volunteered to set up an ornamental grass study at his course next year. That would be a Zone 3 test for these plants



Golden-edged prairie cord grass is one of only a few truly showy North American native ornamental grasses. It has aggressive rhizomes that allow it to be used in creek bank erosion control where it also serves as wildlife cover.



Prairie dropseed is another hardy North American native plant. It has many year-round interests including a distinctly sweet smelling flower that blooms August through September.

every year. If these plants can survive a Northwoods study or a season like Madison had last winter they can surely be recommended for anywhere else in the upper midwest.

Ornamental grasses have been

used for centuries in landscapes of Europe and Asia because of all their interesting features. The lack of hardiness information for our climate combined with a lack of appreciation for the beauty and usefulness of ornamental grasses has somewhat limited their use here. Hopefully these studies will give people more confidence and knowledge to use a greater variety of these plants in their landscapes of the upper midwest. Stay tuned for future reports. 🌿

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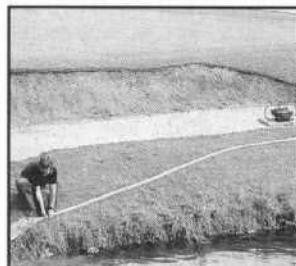
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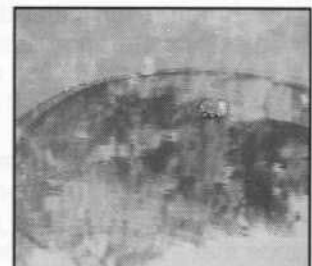
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Dealing With Dead Spots in Native Soil Putting Greens

By Dr. Wayne R. Kussow
Department of Soil Science, University of Wisconsin-Madison

Native soil putting greens, known to many as "push-up" greens, took a beating this past winter and spring in many parts of the state. Patches of dead grass ranging in size from one to several square feet in size have been common. For many superintendents this is a perennial problem. In most years, scarifying the soil surface and overseeding resolves the issue for yet another season.

But 1996 has been different. Many found that when they overseeded, the bentgrass germinated, only to die out quickly after germination. Why has 1996 been different? Is there a quick-fix solution? Have years of dumping magical cures on these areas finally caught up with some people?

The uniqueness of the spring of 1996 is nothing more than a manifestation of the underlying cause of annual grass loss — insufficient surface and subsurface drainage. Without adequate drainage, soil remains at or near saturation for long periods of time. Microbes and whatever plant roots remain quickly deplete the soil of oxygen, replace it with carbon dioxide, and, when anaerobic bacteria move in, with phytotoxic gasses such as ethylene. Regardless the exact cause, no grass can survive in this environment.

In most springs, there is sufficient drainage in winter injured areas of putting greens to restore aerobic conditions, at least in the top few inches of soil. This year, May and June brought torrential downpours that maintained saturated soil much longer than normal. Repeated overseedings with bentgrass failed and even *Poa* couldn't take hold so that golfers could putt on something green rather than dead grass and bare soil.

When you experience failure of overseeded bentgrass to survive, the most prevalent cause is saturated soil. However, you and/or some of your golfers may want assurance that the problem does not involve some type of chemical toxicity brought on by overzealous past use of some type of elixir. In this case, you can do one of two things. You can send a soil sample off to a chemical analysis laboratory. The problems with this are that you have to tell the lab what to analyze for, the lab has to be equipped to do the analysis, someone has to be able to interpret the results of the analysis, and you're talking \$250 or more per soil sample. I advocate something you can do yourself at no cost — a bioassay.

A bioassay is an analysis in which you use a living organism such as a plant to tell you whether or not it can grow in your soil. Bioassays are easy to run and cost virtually nothing. To do one, begin by collecting several cores of soil from both bad and good spots in the putting green. Spread the cores out somewhere to air-dry. Periodically try to crumble the cores with your hands. When the soil has dried to the point where it can be crumbled, do so and pack some of each soil sample into small containers such as styrofoam coffee cups. Seed both with

bentgrass, moisten the soil (do not saturate!), and loosely cover the two cups with other cups or pieces of plastic sheeting. Place the cups on a window sill where you can easily examine them. Depending on temperature, you may see signs of germination in 4 to 5 days. If after 10 to 14 days there is no difference in grass growth in the two cups, you can be assured that your problem is drainage and not chemical toxicity. Air-drying the soil restores aerobic conditions but only very rarely would the chemical toxicity be resolved.

Should there be substantially less bentgrass growth in the cup of soil taken from the problem areas on the putting green, then you do have to suspect chemical toxicity. You can then spend a lot of time and money trying to identify the culprit, or focus on restoring bentgrass on your putting green. The solution is to remove the contaminated soil. This brings up the question of to what depth? I'll venture to say that in the majority of cases, removing 4 inches of soil will do the job. If you want to confirm this first, repeat the bioassay with soil taken from different depths.

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In the large majority, if not in virtually all cases, the failure of overseeding results from inadequate soil drainage. The solutions vary in time, cost and permanency. The least intensive approach is to eliminate pockets and depressions in the putting green where water accumulates. These are easy to identify because that's where you find badly weakened or dead grass each spring. Filling in the depressions with soil is seldom more than a single season solution to the problem. All you generally accomplish is moving the surface runoff to an adjacent part of the green. A more permanent solution is strip the sod from the offending part of the green or the entire green and recontour the green so that there is continuous slope in all directions off the green. If you take this route, you may as go one step further and install tile drainage as well. In doing so, keep in mind that this is native soil, not a USGA sand-peat mix. The drain lines need to be down at least 12 inches or so and spaced fairly close together—as little as 4 feet apart in clay soil.

You might also try vertical drainage. By this I mean pulling large cores or drilling to a depth of several inches and backfilling with a coarse, rapidly draining material such as coarse sand or one of the porous ceramic products on the market. But be aware that the long-term success of this approach is highly variable. How well the vertical drains function depends on where your drainage problems arise, the drainage characteristics of the soil where the drains deadend, and the severity of the problem.

Many times, native soil greens drain satisfactorily for a time after construction, but then problems develop. The most common causes are uneven settling that creates depressions and surface compaction. Vertical drainage

that in effect by-passes the compacted zone generally results in a dramatic improvement in putting green quality for as long as the vertical drains are functional. In-filling of the backfill material in the vertical drains with native soil or sealing of their surfaces with native soil reduces the effectiveness of the vertical drains over time.

Should you be so lucky as to have coarse, sandy or gravelly soil under you native soil greens and are able to connect to this from the putting green surface with vertical drains, vertical drains may very well be the final answer to your drainage problems. Unfortunately, I've yet to find this "ideal" situation. More likely, the vertical drains will dead-end in the same type or even a finer texture of soil than that from which the greens are constructed. In this instance, there are definite limitations on how much and how rapid drainage will occur through the vertical drains. Without some testing, the degree of limitation is almost impossible to judge. You can get an idea of this by removing a soil core with a soil sampler to the depth of drilling or coring. Fill the hole with water and see how fast the level subsides in the hole. Repeat this several times in succession to simulate drainage rates at different soil moisture contents. If, as I've found in some areas of our native soil green at the Noer Turfgrass Research Facility, water stands at a depth of 2 inches or less from the surface for 24 hours or more after a good rain, the chances of vertical drainage being your salvation are not very good. Tile drainage is required.

How well vertical drains function also depends on rainfall patterns and your irrigation practices. The less you have to depend on the vertical drains, the better they function! In years of low rainfall, the vertical drains may effectively serve as temporary reservoirs for drainage water. But their capacity to do so is limited — on the order of 0.25 to 0.45 inches of water at any one time. The bottom line here is that vertical drains are not equally effective in all years. They have capacity limitations that can be exceeded.

Of course the ultimate solution to native soil putting green drainage problems is reconstruction. For many, this is the only long-term way to overcome the two D's of native soil putting greens — drainage and dead spots. The two are inextricably linked together. ♣

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GOOD NEWS, BAD NEWS

By Pat Norton

From the 'good news, bad news' department of the golf news media, we now report these happenings from 'the Land of Lincoln'! (Every time that I hear or read that phrase I really do expect to actually see Lincoln out on the land, splitting rails or something...wouldn't that be a sight?)

And since, like Lincoln, we're all so analytically minded, so liberally open minded, so open to all points of view these days, it should be easy to see how current happenings 'turn both ways'...to see both sides of any situation...and consider things from the other person's point of view.

So, without any further ado, let's pick out ten *summer of 1996* happenings, ranging from the decidedly serious flooding here in Illinois to the almost absurd, which would be my reluctance to dutifully attend my spouse's high school reunion up in Neenah!

1) *The Great Deluge of 1996* — which is the term being used by the Joliet Herald and others to describe the disastrous flooding in ChicagoLand this summer. This was some pretty serious stuff folks, and I'm not talking about golf course damage or course closings...the stories that force a person to count his blessings have to do with people suffering complete loss of their homes, severe damage to property, and serious damage due to water, oil, soil, or whatever other debris washes down a river during flooding. Rainfall totals ranged from 10-16" in about 24 hours. One story printed in the Joliet newspaper told of dozens of homes forever tainted with oil from a Texaco facility that was overcome by flooding. This petroleum facility did have numerous flood retention ponds intended to retain floodwater...however, electric power to their pumps was knocked out for about 30 minutes which allowed quite a bit of oil contaminated water to wash downstream and infect these homes.

Stories like these abound all over the Joliet, Naperville, and Aurora areas, which are only about 30-40 minutes away from Nettle Creek CC, my home away from home. That, in short, is the bad news. And there is lots of it, due to the flooding, all across south ChicagoLand.

The good news, and more than a little ironic, is that those communities and golf courses located south of this area, namely all of us here in Morris and further south of I-80 escaped those rainfall totals by the narrowest of margins. We received only 3.1" during that period, were closed for one day, and ever since have been running carts and providing a golf venue for golfers whose home courses have been closed for two weeks.

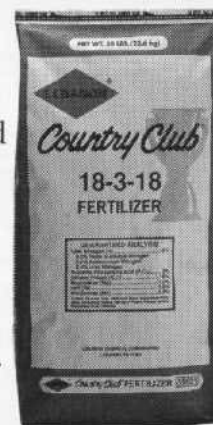
It strongly felt, and still feels, as if we'd been spared this wrath of nature while unfortunate others suffered great personal and property losses. And that is just exactly what happened...some were spared this calamity, while others received the full force of this storm and are still trying to deal with its aftermath. We were extremely fortunate...

2) *Beautiful Weather, Beautiful Turf* — the full irony of this summer's weather is not lost on me or anybody else connected with this golf course. Except for a 25 day period without rainfall in late June/early July, we've had great weather, have great looking turfgrass, and are having a very good season financially! Last spring was a very wet one for the entire north side of ChicagoLand, and the reports are of numerous public courses suffering a great loss of revenue during that period. Top it all off with the July 17 flooding disaster, and I'm sure that those courses that were slammed twice this season by Mother Nature would rather forget 1996 and start over in 1997.

Every morning for the past two weeks we've all needed sweatshirts in the A.M., I haven't had to irrigate at all for a long time, all roughs are entirely greened up and growing actively, and best of all, the temps and humidities are Septemberlike!! And the date today as I write this piece of fluff is July 31!! This is all too good to be true!!

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The down side of this situation is that August is still upcoming and the weather could change for the worse. No big deal...September will truly be here before we know it...in fact, September will probably be here before you all read this!!

The other down side is that so many people are having terrible times this summer due to the weather...it just doesn't seem right to be having such a great summer...due almost totally to Mother Nature.

3) *Annual August Student Exodus* — in which the college students on our staffs leave us high and dry...again! Don't they realize that Cupsetting and Course Setup 101 is just as interesting and valuable as Econ 101? Don't they realize just how much we'll all miss them? Not as the people that they think they are, mind you, but rather as 'a somewhat knowledgeable body' that fills a slot on a soon to be depleted golf course staff...

They, on the other hand, are now counting down the days until 'The Great Escape'...feeling pretty good about themselves, their tough summer of golf course labor, their newfound sense of responsibility, and most importantly, their acquired knack of answering the alarm early every morning.

All of these qualities... that their parents implored us to instill in their offspring back in March and April...are now deeply ingrained in the subconscious minds of these 'young puppies'...for maybe... two or three weeks. Then the 'college lifestyle and habits' override the 'real working world habits'.....sort of like the angel and devil whispering in each ear scenario.

I am reminded, as I write this, of John Belushi in 'Animal House', which we all watched 3-4 times during registration week in late August 1977. Great movie, even greater attitude towards life...which we only occasionally adopted as our own during that school year.

Which only proves that we were all like these current students once upon a time. The good news here is that they've been a tremendous help all summer long and have learned quite a lot about how golf courses operate, while the bad news is that summer and their time with us ends all too quickly.

4) *To Build Or Not To Build* — a new clubhouse, that is. This summer has found our ownership group (in which I have an amount of stock, and an even smaller voice) debating the merits of closing out the lease on our rented, three wide trailer/clubhouse this November and proceeding with a very necessary, and hopefully very modest, custom built clubhouse. The discussions have been very interesting, but not very fruitful. We've decided to be cautious, extend the lease on our current building for a minimum of one year, properly plan and design what we need, and then proceed in the fall of 1997.

It sort of goes back to that old argument about how much clubhouse, how much swimming pool, how many tennis courts, etc....to what extent do these other facilities make sense? The simple question of 'How much clubhouse does an 18 hole public golf course need?' is answered in a variety of ways. From the palaces out there, I'm judging that many courses have delved into the restaurant, banquet, and wedding businesses.

This might make sense if you're surrounded by urban population...if you're surrounded by open land located 4 miles west of a town of 10,000 people, then simply serving the public golfer, and the attendant outings, makes lots of sense to most of us. There is one amongst us who seems

to crave fancier digs, however. We're of the opinion that after he buys everybody out for a strong price, he can build whatever it is that he desires. Let him be the 'banquet and wedding king of Grundy County'!! Best of luck, chump...

5) *Meat and Potatoes* — which is a simple metaphor for a real basic golf course management style..."Give me the meat and potatoes everytime, bud, and pretty much skip your sales pitch about this or that 'bio product' or 'really hot wetting agent'". I am usually not interested!!! The good news is that I've never bitten really strongly on some of this crap, while the bad/sad news is that I've taken a few small bites in my time, had to spit everything out, and remember the bad taste thereafter.

The huge problem with most of these products-there is no solid research, only testimonials from users claiming to see positive results. Also, tell me truthfully that the positive results, if there are any, are due solely to your product!!! Couldn't it be the timely rainfall, nicely moderate temperatures, the spoon feeding application just now kicking in, or any other number of contributing factors? And if you tell me that your product must be applied every two weeks for an entire season in order to see best results, I'll scream!!!

There are so many other possibilities for what's happening out there on those greens that there's no logical and truthful way that any sales rep can claim positive results due to the sole use of their product. I have no check plot against which to compare, and have neither the time nor intention to set up check plots on my practice putting green or bent nursery just so that some slick sales rep can sell me his questionable product...let it rest, fella!!!

I am just not interested, especially after about four months of the season has passed by...I swear that 75% of the sales of these 'cure-all, bio products' are made during the late offseason when superintendents have an extreme case of cabin fever and the itch to produce green, greener, greenest landscapes makes it tough to resist....

6) *Accelerate and Finish Those Projects* — like any superintendent, I love making landscaping and course construction improvements to a golf course. Getting those creative juices flowing, challenging a guy to complete a job as envisioned and budgeted...it's the nuts, baby!!!

This attitude matches almost exactly with the philosophy of our other owners, which is great news for all concerned.

(Continued on page 27)

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(Continued from page 25)

Concrete carpaths, drainage, extensive sodding, bunker renovation, and new par 3 tees...lots of work, lots of pressure, but also lots of fun and satisfaction...about mid-July we realized that the par 3 tees project would require completion by August 1, mainly because of the imminent departure of some key staffers.

The good news was that things were wrapped up easily by August 1, with great 'grow-in' weather and rainfall following in very nice fashion!

Bad news? Yes, in the sense that green committees, members, or civilian owners take things for granted sometimes and just routinely expect great results on these projects with very little comment or feedback unless there is a problem!

Don't they understand that we all crave the compliments, the encouragement, and the appreciation? Obviously not, sometimes....

7) *Never a Summer Vacation* — for the 16th consecutive year, Susan and I have been through the lack of any sort of summer vacation. During this summer period the family discussion usually is dominated by this fact. We make up for it all nicely by taking the kids to Target, then Sam's Club on Sunday afternoons....it's a heck of a good time.

Thanks so much to all those who were influential during my impressionable, naive years during college and early superintendence...I was most certainly brainwashed into liking this golf course work... I thank you, my children, thank you, and especially my spouse thanks you for all those summers of not spending exorbitant amounts of \$\$\$ on such foolish things as family summer vacations!!!

The good news is that we still have a lot of potential summer vacations upcoming (yea right), while the money saved goes toward a good cause (new golf clubs that get rarely used).....

8) *Another Comment About Golf Cars* — the ultimate good news, bad news discussion of the golfing world. "Hey, hey, the good news is that we're letting the carts out again today...against my better judgement....no loss of revenue due to an overprotective superintendent, eh???"

The bad news is that we're going through a lot of metal studded tires in an attempt to gain traction for golf cars out on our oversaturated, muddy, ripped up golf course.

We've also instituted a 'golfer rescue policy' here that calls for life jackets, lifesaver rescue rings, and power winches on all golf carts...for those inclement days when we've got no choice but to grab those green fees and push those golfers out onto 'Jurassic Park CC'. Keeping the golfers in twosomes, otherwise known as 'the Cub Scout Buddy System', helps tremendously also. If a golfer does rescue his buddy from the torrent, he's entitled to a free round of golf!! If he fails, we never let him golf here again...only the strong survive our scrutiny...

Always remember, fellow golf course agronomists...green fees first, golf course a very distant second.

9) *Spouses' 25th High School Reunion* — after all these years, the spouse should never, ever attend such affairs...it's questionable, really, if the high school alum should even go back in time to the early 70's. But wife Susan bleeds for the 'Neenah Rockets' and life back in Wisconsin, which we both really do miss. So off she went, towing the three children along for company.

By all reports, she had a great time, especially when one of the guys kept up his end of the drunken conversa-

tion with her by repeatedly stating "I gave you that scar on your leg in the sixth grade...I'm so sorry!"

My standard, but very real excuse was that I must toil away another weekend in the grooming of the golf course...which was true.

I am so, so glad that I stayed home. If anything, the alum should attend, have a great time, have a few drinks too many, suffer the next day, and return to her family renewed and refreshed. And that's just about what happened!!

10) *A Comment About the Environment* — my last column earned me a letter of mild rebuke from GCSAA because of my opinions on their 'Environmental Steward Awards'...now I feel a bit like Mike Royko...and frankly I'm proud of it all!!

The good news is that at least *'THE GRASS ROOTS'* gets thoroughly read and digested by quite a few in the golf course world. The bad news is that I won't be receiving my complimentary GCSAA author seminar registration....

This publication, totally unlike other other chapter publications that I read, is filled with great articles, columns, and opinions. They are not afraid to be outspoken, and sometimes critical of others. They are not afraid to print strongly opinionated pieces. They are not afraid to print the truth or strongly editorialize when needed.

If you doubt that, try seeing it from another point of view. Would you rather have a chapter publication that contained nothing of interest or value, that displayed tons of advertisements and not much more, and that was read in about fifteen minutes and idly laid aside?

I didn't think so. ♣

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Growing Up (John Deere) Green

By Emily Buelow

Editor's Note: Emily Buelow is a graduate student at the UW-Madison where she is studying for a M.S. degree in turfgrass science in the Department of Horticulture. Dr. Frank Rossi is her major professor. When she isn't working at the Biotron or in a lab in the basement of the Horticulture building or maintaining research plots at the O.J. Noer Turfgrass Research and Education Facility, you might find her on the business end of a greens mower or some other machine (unfortunately, not many of them are green) at Blackhawk Country Club in Madison. She expects to complete her degree in July of 1997.

I think of my dad often while I am working. While I was growing up I spent a fair amount of time with him in the yard, looking at tractors at the county fair, and at John Deere family functions. I think he inspired my interest in turfgrass.

Mowing grass at the O.J. Noer Turfgrass Research Facility is pretty much the same as it was mowing our yard or the neighbor's yard. Although these days my mow lines are straighter and I am a little more meticulous. Dad was pretty lenient about my mowing pattern. He was just happy to see the lawn get cut without any major mishaps.

The pay I receive as a UW-Madison graduate student is a little different than what my dad paid me, which was nothing. Yardwork was just something we did as children in our family; it was part of our household responsibilities. It was also a great opportunity to hang out with Dad. Of course, playing my natural role as a kid, I always had to act as though I hated having to spend my afternoon weeding or edging.

My dad did pay me once, though. I don't remember how old I was or in what state of the summer we were in. What I do remember is the way that our yard looked.

Any casual passer-by would have

thought we had sown our lawn to dandelions and that we were harvesting them for wholesale. I realize that I could still be envisioning all of this through a child's eye; I am not suggesting that the dandelions were two feet tall or anything, just that there were a LOT of them.

My dad offered me a half a penny each for all the dandelion flower heads that I could pick that day, and sent me off with a cardboard box. Half a penny doesn't sound like much, but you would be amazed at how little money I needed to buy a load of candy, so I started off excitedly with dollar signs in my eyes, and an empty cardboard box behind me.

I never made it to the front yard. I could have sworn that the dandelions were multiplying while my back was turned. By the time my father came home from work, I had had enough, and I just wanted the money I had earned. After setting to the task of counting, my dad had to shell out \$22 to me for picking about 4,400 dandelion heads. I still cannot believe we had that many dandelions in our back yard, and that I lasted long enough to pick over 4,000 of them.

While not all of the jobs that I do while researching for my Masters thesis are that tedious, Dr. Rossi will tell you that I like to let him think that they are. I haven't given up entirely on that role of pretending that some of my jobs are burdensome.

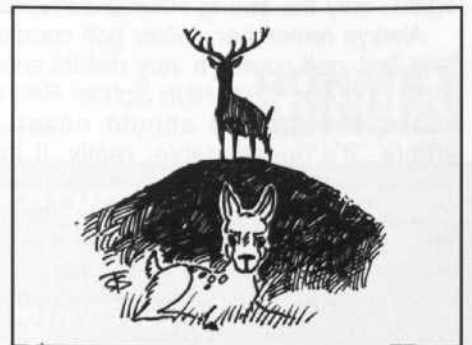
There were times as a kid when I accidentally mowed over and destroyed things with the mower. There were also times when I actually ran INTO something with the mower — things like the car, another piece of machinery — you know, your basic things to avoid with a riding lawn mower. Dad was pretty level headed about those instances. Luckily for me, my two older sisters got him used to dealing with chewed-up shrubs and paint scrapes around the posts long before I ever hopped on a mower.

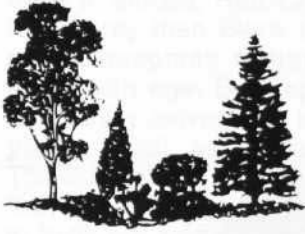
As the daughter of a John Deere engineer, I slept with my "Johnny Deereest" stuffed yellow and green deer, wore John Deere t-shirts, and had the best toy tractor collection in the neighborhood. I also used to make my dad crafts in school with deer on them. I once made a rug with a big "JD" on it in shades of yellow and green, hoping he would hang it on his office wall. I don't think it ever made it.

I grew up thinking that there simply was no other company that supplied the wonderful things for people that John Deere did. Of course, I was wrong. After I came to the realization that there were competitors, whenever I would ride in the car with my dad, he would teach me which color of equipment went with which competitor, and what sorts of other equipment they had in common with John Deere. I was wholly convinced that no company could be better. I figured that no other companies had my father working for them, so they didn't stand a chance.

To be honest, I didn't even consider pursuing a career in the turf industry until I took Dr. Rossi's class. I don't know why it wasn't obvious to either me or my father. Perhaps he was remembering some of my mowing mishaps and figured I should stay away from working with machinery. I think he realizes that I have outgrown that clumsiness and that I am happy working in an industry to which he originally exposed me.

I felt great two years ago at the GCSAA meeting in San Francisco to walk around with my dad and have him introduce me to his peers as his daughter who is studying turfgrass. He's always been proud of both my sisters and me, but it showed me that he too knew that the turf industry was the natural place for me to be. 🍷





SHRUBS FOR THE GOLF COURSE: *Beauty and Function for Us, Food and Shelter for Birds*

By Dr. Lois Berg Stack
Ornamental Horticulture Specialist
University of Maine Cooperative Extension

Editor's Note: She's back! We're really fortunate that Wisconsin native and University of Wisconsin-Madison educated Lois Berg Stack has agreed to write again for THE GRASS ROOTS. She was here for our Wisconsin Turfgrass EXPO last winter, and we will feel her presence in most issues of our chapter publication.

On the last Saturday in July I was flipping through the TV channels when I thought I recognized someone on the screen. It was Professor Stack! She was on a program on The Learning Channel and she was talking with the host about indoor plants. Now that's fame! Her appearance on a national television channel only adds to the thrill of having her back on our writer roster.

Shrubs are used in most landscapes, but their wonderful and diverse characteristics are almost overlooked. We think of large trees for shade, wind protection and structure in the landscape. We think of small annual and perennial flowers for color, fragrance and change through the seasons. But we speak of shrubs as "facer plants" for the front of a wooded area, or "background plants" for flower gardens, or "transitional plants" for the space between two areas. Shrubs are important for their own intrinsic value as well as for the roles they play among other plants.

Shrubs are a great addition to the golf course landscape for many reasons. Wherever they are used — as "facer plants," "background plants," "transitional plants," or as specimen plants all by themselves - they offer color, texture, form and fragrance. And there is one more important thing they offer: shrubs provide a significant source of food for birds, primarily in the form of their fruits.

Birds require so little, and provide so much enjoyment. They should be encouraged in every landscape. Golf courses can play a major role in providing the food, shelter and water that birds need to survive. In urban areas where individual homeowners control relatively small plots of land, golf courses are among the larger tracts administered by single managers. When golf course managers — along with the managers of town woodlots, public parks, cemeteries and other greenways — provide a diverse habitat that attracts birds, the entire community benefits. Golf courses provide important bird habitat in rural settings, too, because they offer maximum woodland edge where plant diversity, light, food and cover provide much of what birds need.

Let's look at woody landscape plants that serve two functions — these small trees and shrubs have good design features and also provide excellent sources of fruits for birds. In addition to adding interest to the four-season landscape, they provide bird food in the form of fruit from summer to winter. Even though some of these plants provide bird food during a time of the year when golfers are not present, they are still important. After all, birds need to eat every day!

Ten Small Trees and Shrubs for Beauty and the Birds

Aronia melanocarpa, the "Black Chokeberry," is a member of the Rose Family. It reaches a height of 5' and suckers to form rather large colonies. A highly adaptable shrub, it performs equally well in low wet spots and dry sandy hillsides. This plant belongs at the edge of wooded areas, massed in shrub borders, or as a background shrub in perennial

gardens. The clean white flowers are attractive in spring. A related species, (Continued on page 31)

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