

THE GREENERSIDE

Official Publication of the
Golf Course Superintendents Association of New Jersey

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Golf course impact on water quality

The Golf Course Superintendents Association of America has released the following report on the impact of golf courses on water quality. Members will be pleased to note that the study concludes that "on the whole, a golf course makes an environmentally sound contribution to any community."

FINDING

Golf courses do not pose a significant pollution threat to the nation's water supplies. This conclusion is based on a review of the scientific evidence that is currently available. Neither groundwater nor surface water is threatened by golf course runoff. Further, studies show that stormwater runoff is near zero from golf courses.

GROUNDWATER

About half of all people in the United States depend on groundwater for their drinking water, and the figure is 90% in rural areas. Results from ongoing scientific studies show that the use of pesticides on golf courses does not threaten public drinking water. Because of the low mobility and quick biodegradation of most golf course pesticides, they simply do not reach groundwater in significant quantities.

One Environmental Protection Agency-funded study being undertaken on Cape Cod in Massachusetts provides for a "worst-case" estimate of groundwater contamination. To date, test results have been encouraging, demonstrating that golf courses and clean groundwater do coexist.

Some experts argue that golf turf offers uniquely

favorable control mechanisms to prevent groundwater contamination. Dr. Stuart Z. Cohen, a former Ground Water Team Leader for the EPA in Washington, notes that "the use of pesticides on golf courses poses less of a threat to the nation's
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THE GREENERSIDE

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GOLF COURSE SUPERINTENDENTS ASSOCIATION OF NEW JERSEY

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EDITORIALS

Did we say "drought"?

"We" is the public "we" since most of us are reluctant to admit errors or simply to admit being on the wrong side of a guess. Two issues ago "The Greenside" was discussing reservoirs being down to less than 60% of capacity. Alright! Who rain danced? Who washed their car once too often? Who's the guilty party? Call this office. You will not be turned in, I assure you. However, we may lock you up until the next drought. With reservoirs at 98% of capacity, it appears that water supply will not be a major factor this year. Too much rain, however, brings its own challenges as we are well aware. The fungal diseases appreciate the extra moisture, the frogs thrive on it, and the mosquitoes absolutely love it.

Mosquitoes need standing water for their larvae to grow and develop. Adult female mosquitoes must have a blood meal before they can lay eggs. Now at last count, Northern New Jersey had no shortage of humans for blood meals. With the extra rain and standing water, there is no shortage of habitats for mosquito larvae either. With these two factors working together, we have one of the "best" years for mosquitoes ever. Mosquito control is a government business, private citizens are not permitted to have control programs. The rationale for this is that successful mosquito control requires a wide area program that includes more than just pesticidal treatments. Each county has a Mosquito Commissioner's Office which is responsible for controlling these pests. In New Jersey, programs are aimed at controlling the larvae through habitat reduction and larvacide programs. If mosquitoes are not flying, who cares. This year, the rain has caused generations of mosquitoes to overlap and the population has "exploded." The Mosquito Commissioners' Offices have been overwhelmed with calls. They are well aware of the size of the problem and have asked the state for more money to help solve it this year.

If you have standing water on your golf course, drain it. If it can't be drained, contact your county Mosquito Control office and notify them of the situation. Controlling the adults will temporarily reduce the number of bites per night. It is unlikely to control them all. After all, New Jersey is the Mosquito State! We have over 60 species, all of which are looking for a free meal!

ILONA GRAY

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Our apologies

In the May/June issue of "The Greenside," the article entitled "Patch Disease sink or swim . . . another perspective," neglected to mention that the author, Bob Scott, is an Elanco sales representative. We apologize for any confusion this may have caused.

In the May/June Editorials, there was a mismatch of golf courses and superintendents. The following should have appeared under the honor roll established by "The Met Golfer" — Hackensack - William Gaydosh and Knickerbocker - Sam Juliano.

PRESIDENT'S MESSAGE



Steve Finamore,
CGCS
President GCSANJ

Dear Members:

Two important events are coming up in August. Our Second Annual Cruise is scheduled for August 19. It gives our spouses and other guests a chance to share in the camaraderie of our profession and, from the reports of those who attended last

year, all were quite pleased. Committee members **Bruce Cadenelli** and **Bruce Peeples** have planned another good evening and I encourage you to send your money in as soon as possible for this is a sure sellout this year.

The Invitational is scheduled for August 28 at Essex County Country Club. This includes lunch, golf, and dinner with your club's golf prof, president, and greens chairman. It is our premiere event of the season and this year's program is at one of the top layouts in the state. Host **John Schoellner** is sure to provide us with a great day. The Club officials enjoy this event and it gives them an opportunity to interact with their Golf Course Superintendent in a somewhat relaxed environment. See you in August.

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CALENDAR

- July 27** **GCSANJ July Meeting**, Colonia Country Club, Colonia. Host: Christopher Gaynor, (201) 381-3311
- July 27** **MGA, Public Links Championship**, Spring Lake Golf Club, Spring Lake Heights. Host: Bruce Peeples, (201) 449-3455
- August 3-6** **MGA, Amateur Championship**, Metropolis Country Club, White Plans, NY. Host: MGA, (914) 698-0390
- August 15-17** **MGA, Open Championship**, Bethpage (Black) Farmingdale, L.I. Host: MGA, (914) 698-0390
- August 19** **GCSANJ Boat Trip**, Manasquan & Barnegat Bay, Brielle. Contact Bruce Cadenelli, (201) 531-3609
- August 28** **GCSANJ Invitational**, Essex County Country Club, West Orange. Host: John Schoellner, (201) 731-1403
- Sept. 12** **GCSANJ September Meeting**, Apple Mountain Golf and Country Club, Belvidere. Host: Andrew Kiszonak, (800) PLAY GOLF
- Sept. 20-22** **New Jersey Landscape & Equipment Expo**, Convention Center, Atlantic City. Contact: S. Howard Davis, (609) 737-0890
- October 3** **25th Annual Turfgrass Equipment, Irrigation and Supplies Field Day**, Rutgers Stadium and Golf Course, Piscataway. Contact: Len Forlenza, (609) 871-2055



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GCSANJ NEWS

THE DIRTY DOZEN GROWS

It began a number of years ago with Shaun Barry, John Hyland, and Ken Kubik assisting the superintendent and his staff in staking and roping for the LPGA Chrysler-Plymouth tournament. Over the past three years, this event has become an increasingly structured affair.

On May 7, we had 19 association members spend their day at Bamm Hollow staking and roping. We want to sincerely thank the following individuals who gave up a Sunday to be a part of our team: Shaun Barry, Bill Ritchie, Jay Challenger, Chris Whelan, Dave Pease, Matt Clement, Bruce Cadenelli, John Hyland, Ken Crouse, Bruce Peeples, Mike Hocko, Ron Luepke, Jim Koenigs, Pat O'Neil, Jeff Allen, Gary Steadman, Mike King, Forrest Arthur, and Ed Mellor.

This activity is more than a workday; it's a truly fun event. I think all who participate enjoy the day, and look forward to it each year. We look to another great turnout at the '90 tournament.

Footnote: Phil Scott informs us that 95% of the gallery rope was discarded after this year's tournament. We can look forward to an easier time of roping next year.

1989 GCSANJ DISTINGUISHED SERVICE AWARD

The GCSANJ is presently accepting nominations for the "GCSANJ 1989 Distinguished Service Award." This award is given annually to an individual who is dedicated to the turfgrass industry, particularly golf course management, and has been an inspiration to golf course superintendents.

Past recipients include **Al Radko**, former USGA Green Section director; **Dr. Paul Sartoretto**, vice-president and director of Research and Development for the W.A. Cleary Chemical Corporation; and **Bob Dickison**, CGCS, Golf Course superintendent at the Upper Montclair Country Club and past president of the GCSANJ.

Nominations should be submitted in written form to the GCSANJ in care of Ed Walsh, CGCS.

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LPGA: A VICTORY AT BAMM HOLLOW

Arizona native Cindy Rarick led from start to finish and won the Chrysler-Plymouth Classic with a five under par 214 at Bamm Hollow Country Club in Lincroft during the second week of May.

Phil Scott and his staff were given notice of the tournament only this January. They had to really scramble to prepare for this major event. By all accounts, the course was in outstanding condition. The winner, Rarick, did not have one three putt hole the entire tournament. Phil did have to deal with the exceptionally wet weather which played havoc on the "Parkway" holes.

GCSANJ members once again rallied around the tournament as many volunteered their time to help with roping and staking and the transportation committee. Thank you to all who helped! One unanimous request before next year's tournament is to please buy new rope!!! A knot or a piece of tape every eight feet on a long par is just not the way to go.

Congratulations to Cindy Rarick and to Phil Scott.

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MANASQUAN MEETING A GIANT SUCCESS

One of the few sunny days in May found GCSANJ members and guests at the Manasquan River Golf Club in Brielle enjoying a great day of golf and education. There was a large attendance for this meeting with over 132 playing golf including 20 guests from the Philadelphia Superintendents Association. Despite recent soggy weather, **Glenn Miller** and his staff provided us with a well-groomed golf course and excellent playing conditions. Manasquan River Golf Club has a unique layout with many different lies. The nearness of the Atlantic Ocean adds to the effect.

After an excellent meal, the 162 who attended dinner heard from **Steve Cadenelli**, GCSAA secretary/treasurer and **Pat Jones** also of GCSAA. They discussed the Hall Kimbrell Environmental Audit company and how member clubs can take advantage of a reduced price for a very thorough environmental self-audit. A short video was viewed detailing the audit.

Golf prizes were then given out to the winners and the "not so" winners! As far as I can tell, Manasquan River Golf Club and **Glenn Miller** were the big winners that day!

BRUCE PEEPLES
SUPERINTENDENT

GCSANJ TOURNAMENT RESULTS

Here are the official results from the tournament held at the Wildwood CC hosted by Steve Malikowski on April 20. For first place in the four man low net: Forest Arthur, John DeMatteo, Dennis Krychowecky, and Clyde Ashton. In second place were Kevin Norcross, Ken Rickenback, Ron Luepke, and Jonathan Snore. Forest Arthur had low gross with a score of 74. Right behind him was Harry Harsin with a 75.

Mark Mason won the closest to the pin on the seventh hole and Fran Owsik won the longest hole on the 16th. Fran also won the longest drive for the day on the 18th hole. Skins were Forest Arthur, 2; Kevin Norcross, 3; Dennis Smalldone, 4; Gail Goodrich, 6; Harry Harsin, 12; Paul Brandon, 13; Fran Owsik, 14; and John Carlone, 15.

Glenn Miller hosted the May 25 tournament at Manasquan River. There were a number of excellent rounds shot. Here are the official results:

Flight	Event	Score	Winner
A	1st Low Gross	76	Joe Owsik
A	1st Low Net	73	Ian Kunesch
A	2nd Low Gross	82	Bob Prickett
B	1st Low Gross	77	Harry Harson
B	1st Low Net	70	Tony Bolcato
B	2nd Low Gross	82	Kevin Norcross
B	2nd Low Net	73	Chris Gaynor
C	1st Low Gross	88	Mark Hartman
C	1st Low Net	65	Joe Fricousky, Jr.
C	2nd Low Net	67	Bill Beverlin
D	1st Low Net	68	Joe Meross
D	2nd Low Net	75	Sky Bergen
D	3rd Low Net	77	Rip Rippel

Closest to the pin went to Gene Stiler on the third hole, Jim Waniak on the sixth, and to Bruce Peeples on the 15th. The longest drive went to Joe Henry on the 12th and Ed Schulsinger had the honors for the highest score! Skins were as follows: Paul Granger, Eagle!! on the 11th, Joe Owsik on the 14, Don Gaffney on the 15th, and Paul Granger on the 16th.

Congratulations to all the winners and thanks to the tournament hosts as well as Shawn Barry, our official score reporter!

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Golf course impact on water quality

(Continued from page 1)

groundwater than does the agricultural use of pesticides.

Additionally, turfgrass provides a "thatch layer" not found in row crop situations. Thatch binds up pesticide residues and increases degradation of some chemicals. Dr. Harry D. Niemczyk of Ohio State University has found that as much as 99% of recovered pesticides are found in turfgrass thatch.

In some areas, golf courses are also helping to mitigate the groundwater pollution effects of hazardous waste sites. Many of the nation's golf courses fertilize soil using sludge compost mixes prepared by urban waste recycling programs. These sludges might otherwise be disposed of in municipal landfills. Thus, potential groundwater leaching from dump sites is averted by careful community planning and recycling.

STORMWATER RUNOFF

Stormwater runoff from golf courses is not a significant environmental hazard. Research conducted by Dr. Thomas Watschke, a turfgrass specialist at the Pennsylvania State University, indicates that thick, healthy turf reduces runoff "to next to nothing."

An average golf course of 150 acres effortlessly absorbs 12 million gallons of water during a three-inch rainfall. Dr. Watschke finds that thick, carefully managed turfgrass has 15 times less runoff than does a

lower quality lawn. As a result, almost all of the pesticides applied to the grass remain in place after peak rainfall.

Dr. Richard J. Cooper of the University of Massachusetts argues that turfgrass cover "reduces soil erosion and prevents soil and chemical runoff into water sources."

By comparison, parking lots, streets and even residential areas load nearby waters with hazardous pollutants carried in runoff from road surfaces, gutters and catch basins.

SURFACE WATER

Golf courses help decrease sedimentation pollution of rivers, streams and lakes by preventing topsoil erosion. The major polluter of U.S. surface water is sedimentation from soil erosion. However, turfgrass reduces erosion, as compared to alternative land uses.

For instance, studies show that grassland experiences 84 to 668 times less erosion than areas planted with wheat or corn. Construction has an even more devastating impact on topsoil, so golf courses can greatly reduce erosion effects as compared to other land users, like shopping malls or housing developments.

Sedimentation pollution from soil erosion costs society billions of dollars in increased transportation, shipping, and cleaning costs. Thus, by preventing soil erosion, golf courses serve a very beneficial societal purpose.

CONCLUSIONS

Golf courses do not threaten the nation's water supplies. Scientific studies show that pesticides used on golf courses do not seep into neighboring groundwater sources. Other studies demonstrate that stormwater runoff is greatly reduced by turfgrass. Finally, still more studies show that grassy areas reduce soil erosion, which is a major cause of sedimentation pollution in the nation's rivers, lakes and streams.

On the whole, a golf course makes an environmentally sound contribution to any community.

If you wish a copy of this report, then contact GCSAA's office at (800) 472-7878.



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X MARKS THE SPOT

You know what I always realize any time I look at professional golf or tennis programs on T.V.? It's all the different manufacturers who are represented on the clothing of the players. I started to think of what I wear that has some emblem or logo of a company I do business with. The only difference is I don't get paid to advertise the way professional athletes do. That really started me thinking. If I am advertising, maybe I should get something. I suggest companies or vendors who give gifts at Christmas and fall into this category read no further. It might cost you.

Now at various times, I have had on a **Storr Tractor** sweater while drinking from a **Terre Company** glass or wearing a **Roseman** shirt underneath. I often play golf with my **Club Car** golf bag and wear a **Grass Roots** cap. I used to use a **John Deere** driver, but I got that from **Jesco** and they are no longer in the golf equipment business, so I can't consider them. I repair my ball marks with a **Lesco** ball mark repairer, but those I usually take from Mike's truck, when he's not looking, so those can't be considered, either.

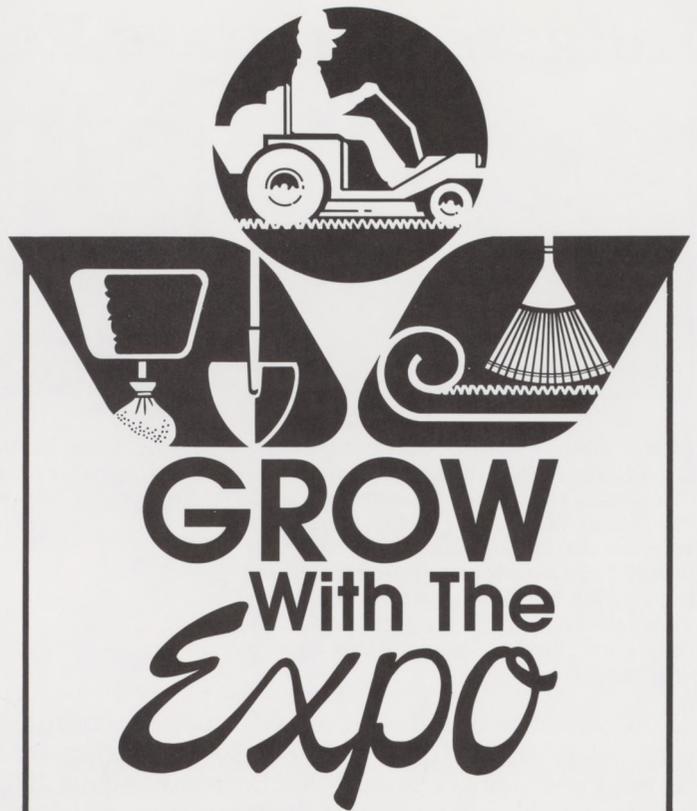
Now I am thinking about fees I should charge for my advertising services. How about \$10.00 per sweater, \$5.00 per shirt and a jacket would have to bring big bucks, maybe \$25.00. Using balls with a logo would bring \$2.00 per round. I really had to think about this one because I originally thought of a per swing price. Can you imagine? It would cost somebody a lot of money, if I used their balls, even if the per swing price was cheap. Now a golf bag would have to be \$50.00 a day, if it is really a big bag that's going to get a lot of advertising. Hey, I don't work for nothing you know!

After I sat down and figured all the additional revenue I could come up with, I would call Mary (my wife) and tell her to go pick out that Jaguar she wanted. I would let the kids know they could go to any school they wanted, and the money they made during the Summer could be spent any way they wanted. Boy, it's going to be good to have money!

The more I think about it, the more sense it makes. Now, because I've done business with all of these companies for a long time, I don't want to take advantage of any of them. I'll start out real slow and inexpensively. I'll certainly have to make a priority list especially in the Summer, when you can only wear so much.

Now, Paul DesChamps, Ken Kubik, Jim Pelrine, Vic Gerard Jr., and Bill Fury, you will be hearing from me real soon. I know you have all worked really hard to be successful, plus I don't want anything for nothing. This is strictly a business arrangement. Just consider me a future ally. Maybe even an entrepreneur in the "Ted Turner" mold.

ED WALSH, CGCS



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For more information on the Nursery, Landscape & Equipment Expo, contact the New Jersey Nursery & Landscape Association, Building A, Suite 3, 65 S. Main Street, Pennington, NJ 08534 or call 609/737-0890.

Rutgers Turfgrass Research Field Day



Albert Foster, (right) Rutgers University Class of 1947 attended this year's Rutgers Turfgrass Research Field Day. Mr. Foster is the first Turf science major at Rutgers studying under Dr. Longnecker (succeeded by Dr. Engle). Mr. Foster hales from the Toms River area. He is pictured with Dr. Bruce Clarke, Rutgers University Professor.



Dr. Louis Vasvary discussing the Whitegrab complex at the Rutgers Turfgrass Research Field Day.



The Traffic Simulator used on the turfgrass research trials as seen at the Rutgers Turfgrass Research Field Day.

Cool and overcast weather welcomed the enthusiastic attendees of this year's Rutgers Turfgrass Research Field Day at the Adelphia farm site. About 250 people turned out to review trials on new varieties, insecticides, fungicides, and plant growth regulators. Discussions among the participants and faculty present added to the event.

Let's start our tour with Dr. Bruce Clarke. He told us that different types of nitrogen fertilizer can actually enhance the production of leaf spot. Fast releasing nitrogen fertilizers, such as urea, definitely encourage leaf spot. The use of slow releasing IBDU applied mid-May produced the best quality turf with a minimum of leaf spot. Dr. Clarke's work was done on Kentucky Bluegrass. We also looked at a large number of fungicide trials on Kenblue Kentucky Bluegrass. These included registered products, as well as those still in development. It's too early in the season to make a definitive conclusion on this test. If you are interested in following up, contact Dr. Clarke for a tour.

Over in the insecticide tests, we listened to Dr. Lou Vasvary on the Spring insect problems. A lot of holes in turf can be made by the Cicada Killer Wasp. These beneficial insects kill Cicadas that can be a problem in trees. Dr. Vasvary predicted that the white grub complex will be very active this year. He is recommending insecticides with long residual activity such as Triumph and Mocap. Soil insecticides have to reach the soil or the insect to do their job effectively. Many products specifically label that they must be watered in. Dr. Vasvary also reminded everyone of the potential for Lyme Disease. He emphasized that people working outdoors should wear light colored clothing, so you spot the ticks; tuck in your socks; frequently check yourself for ticks and use a "DEET" or other tick repellent. He showed the group a large number of different types of ticks. The deer tick which spreads Lyme disease is only the size of a period at the end of this sentence. It is the nymph stage that actually carries the

disease.

The group was warned to be on guard for bogus ryegrass and tall fescue seed sold as "turf" quality. Dr. Henry Indyk reminded us that we should insist on certified seed, in unopened bags, from reputable suppliers, as our best protection from these scoundrels. There is a considerable difference in color, height, texture, overall appearance, and quality, between the bogus and the real thing. Dr. Reed Funk's turf trials afforded us the opportunity to see just how bad some of these bogus varieties are. Dr. Funk also has bred some outstanding new varieties of tall fescues. One variety called "Rebel, Jr." was exceptionally good looking in the trial. It was so good that Dr. Ralph Engle jokingly suggested that Dr. Funk may have dumped some extra fertilizer on the trial. Much to our chagrin, Dr. Funk overheard this joke and gave us a reassuring smile that his trials were strictly on the up and up.

If you are interested in following up on any of these trials, the best approach is to contact the appropriate professor and set up an appointment for a self-guided tour.

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GCSAA NEWS

On April 10 and 11, the GCSAA Education Committee met for their Spring meeting. The meeting was held at the Orlando Convention Center, the site of the 1990 GCSAA Conference and Show.

The opportunity to serve as a member of the GCSAA Education Committee was offered to me by the chairman of this committee, Randy Zidik, newly appointed GCSAA director. My term as committee member is for three years and I expect it will be challenging and exciting.

The list of duties for each member is pages long, but I will list a few of them for those who are not familiar with what the committee does.

1. Organize, develop and review, with the assistance of the director of Education, the educational program for the annual conference.
2. Assist the director of Education in the development of seminar programs.
3. Monitor and assist in the revision and updating of existing seminar programs
4. Recommend and contribute to the development of a collection of educational materials which can be distributed to golf course superintendents for their individual and collective use.
5. Work in conjunction with the Communications and Public Relations Committees to promote the educational programs for the Association.
6. Work in conjunction with the Industrial Advisory Council, utilizing the expertise of the Council members to improve educational programs of the Association.
7. Monitor accredited two-year and four-year turf management schools for the purpose of evaluating the educational preparation of individuals seeking to enter the golf course superintendent profession.

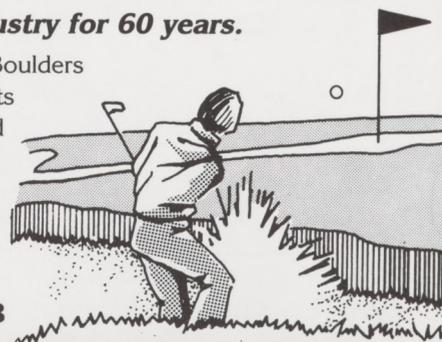
Finally, GCSAA is already anticipating the Orlando conference to be larger and better than ever. Nearly 1,700 people registered for the 33 seminars offered in Anaheim and 41 seminars are scheduled for Orlando.

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EDITORIAL

Water for the future

This Spring I've noticed a major change in the questions club members are asking. Less frequently heard are questions like, "When are greens going to open?" or "How did the course come through the Winter?". These have been replaced by "What's the state of our aquifer?" and "Are we going to have sufficient water to maintain the course this year?". Water, it seems, is on everyone's mind.

In looking at the various sources of water availability to us in the golf industry, I find myself continually intrigued by the role effluent water could play in our future. It is as close to a guaranteed source of water as we will ever get. To be sure, it would not be available to all, but it could very well assist many courses in their future water needs. I believe effluent water has not been given the consideration it deserves. It may still be thought of as a potential environmental hazard when, with proper treatment, it is a safe and environmentally sound source of non-potable water.

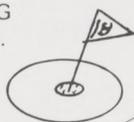
With the beginnings of our Turfgrass Research Foundation, administered through the MGA, this issue is one I believe we should closely investigate. We would need a multi-year study addressing all the issues relating to the use of effluent water, including the political side of the question. This would be a difficult undertaking, but, it's one we must sincerely look at if we wish to continue maintaining our courses in the fashion that today's golfer demands.

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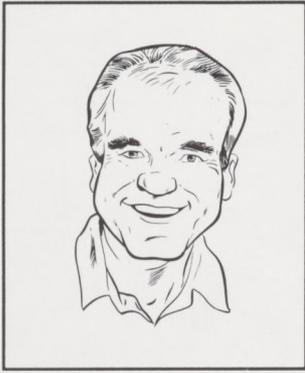
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Jim Gilligan's Column

"The future comes like an unwelcomed guest." Edmund Gosse

What do golf course superintendents know about the future? Those who write columns know less, but we must write with some

thought to the future, since you are reading this piece now about six weeks after it was written. I've been trying to envision what the weather might do after all this Spring rain. Will we have the calamity we had last year, when it turned hot and humid after the heavy rains of late July? It may continue to rain. It might even be cool and dry. Whatever it might be, it is necessary to try and plan for the possible conditions as outlined above.

The rain-softened soil is a constant reminder of the rain, but with a few dry, windy days, that soil will be rock-hard and require aeration to remain viable. The bentgrass is fluffy, a dangerous condition that can be corrected with grooming and topdressing. What is known of the nutrient levels in the soil? How much has been depleted by the excessive moisture? Have the pre-emergent pesticides been weakened? Now is the time to

apply that second application combined with post-emergent spray. With all this rain, crabgrass will be thriving. Were the early season fungicides effective or did they literally "go down the drain?" What fungicides are needed now?

This is a good question. What diseases will be prevalent? What fungicides should you invest in? What is Dr. Clarke's telephone number? (201-932-9400.) Fungicides are more selective and expensive. Choosing a single material or a combination of products that will be effective is important, both culturally and economically. When you read the research reports, the labels, and consult the experts, there are no simple answers. Experience, skill, and some good sampling might help make the correct choice.

How do we reduce the guesswork? We sample frequently; we diagnose properly; we monitor the weather; we observe the turf closely; we understand the diseases; and we know the fungicides. Maybe, we'll get lucky.

What about the irrigation system? Has it become atrophied from inactivity? Will it perform when needed? You can be sure it will be needed. The rain can't last forever. Are the pumps and controls operating efficiently? Are all the leaks in the system repaired? Do the clocks work? There are more questions than answers.

There is nothing magical in being a superintendent. It takes preparation and the knowledge to swing the odds in our favor. Let last year serve as a tough lesson. And don't forget to raise the height of cut also.

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An integrated approach to the management of Japanese beetles on trees and shrubs in the landscape

Christine A. Casey, IPM Agent
Ornamental Horticulture
Rutgers Cooperative Extension

Japanese beetle adults are one of the pests of trees and shrubs in the golf course landscape which consistently pose a management problem for the superintendent. Extension personnel are frequently asked if they know of any tricks or secret weapons for control of this pest; unfortunately, there are none. The following is a list of the various strategies available for management of the adult beetle on landscape plantings. They are not listed in any particular order of preference or effectiveness.

CHEMICAL CONTROL OF THE ADULT BEETLE

While pesticides can offer a quick knockdown of beetles feeding on trees and shrubs, this method will not give long-term control unless pesticides are reapplied several times, as adult beetles emerge over a period of several weeks and continue to fly into an area. For specimen plants which must be protected, however, several applications of a registered pesticide is the best management option. Adult beetles are least active on cool, overcast days, so pesticides should be applied at this time.

MECHANICAL CONTROL OF THE ADULT BEETLE

Beetles can be handpicked and dropped into alcohol. While this is not feasible in the majority of situations, it may be an option if the time and labor are available, the host plant is small, or you do not have or wish to use a registered insecticide. This may also be a viable option if the planting on which the beetles are present is in an area where other hand work, such as weeding, is taking place.

PHEROMONE TRAPPING OF THE ADULT BEETLE

Research at the University of Kentucky has demonstrated that the pheromone trap for the adult beetle may actually increase the severity of a beetle infestation by bringing more beetles to an area than might otherwise be present. It seems that the traps are also not effective to lure beetles away from desirable plantings. Even plants that had traps placed 30 feet away experienced a significant increase in beetle defoliation when compared to plants that did not have any traps placed near them. Pheromone traps can be used to help in timing of Japanese beetle grub control, since the time period during which adult beetles are being trapped represents the period of the beetle life cycle during which any grub control measures will be completely ineffective as there are no grubs present. Just be certain that, if you choose to do this, the traps are placed on inanimate objects such as shelters, fences, or buildings which are not in the vicinity of desirable plants.

CHEMICAL CONTROL OF THE LARVAE

Control of the Japanese beetle larvae is often suggested as a means of controlling the adult. If beetle grubs are present in sufficient quantity to be causing a problem in the turf (greater than 3 larvae per ft²), they should be controlled. However, keep in mind that, because the adults can fly in from other areas, this may not in itself provide satisfactory adult control. If chemical controls for the larvae are warranted, remember to use a registered insecticide and to irrigate the turf both before and after treatment if there is no rain. It is important to irrigate beforehand to induce the beetles to move as close to the root zone as possible so there will be maximum contact with the insecticide; irrigation after treatment helps to move the pesticide through the thatch layer to the root zone.

BIOLOGICAL CONTROL OF THE LARVAE

Many of you are probably familiar with the bacteria, *Bacillus popilliae* (B.p.), which is available for control of the Japanese beetle larvae. While this is probably more effective in the long term than pesticides, there are several drawbacks to its use. As with any biological control, a certain level of the pest (the beetle grub) must be tolerated in order to provide a host for the parasite (the bacterium). This means that some grubs must be present at all times and that chemical control cannot be used in conjunction with biological control. Also, as it takes several seasons to spread through a grub population, the effects will not be seen as readily as with chemical control and it will not give the rapid kill necessary in the case of a high grub population. Chemical and biological control could be used together by using the chemical to obtain a knockdown of a high level of grubs; this would then be followed by the biological control, which would provide long-term management. Remember that B.p. is effective only against Japanese beetle grubs and thus can only be used in situations where this is the only grub problem. Keep in mind as well the caution stated under chemical control of larvae that the adult beetles will readily fly in from other areas. Any attempts at larval control as a means of providing adult control are best done on a regional basis between neighboring golf courses, parks, schools, or other large turf areas.

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SUPERINTENDENT PROFILE

CHARLES W. "CHARLIE" EDGAR

My curiosity had gotten the better of me. Passing Greenacres Country Club daily, and having heard many positive comments about the remarkable recovery of his course from last Summer's problems, I had to get to know Charlie Edgar.

Superintendent at Greenacres C.C. since 1973, Charlie comes from a family long involved in turf management. His father, Alex, now retired, was superintendent at Essex County Country Club in the early 1960's, where Charlie did the night watering and sprayed the greens. Uncle John Edgar is in charge of Old Orchard Country Club. As for Charlie, he attended Penn State and, upon completion of his studies in 1965, returned to Essex County, working under Ray Hansen.

In 1966-67, Charlie assisted with the installation of one of the first multi-row irrigation systems and in 1967 became Ray's assistant. By 1973, he was ready to go to Greenacres as superintendent. Charlie recalls that 1973 was an especially tough year, hot and dry, and that Ray was reluctant to let him move on. In fact,

for a short time, Charlie was dividing his time between Greenacres as superintendent and Essex County as assistant.

The situation at Greenacres in the late Summer of 1973 was bleak and when Charlie took charge, he had 20 dead greens to contend with. All efforts to reseed the greens had failed, as they had been contaminated, and any new growth promptly died. Finally, Al Edgar suggested the use of charcoal, and the turf response was dramatic. Within days, the grass was growing vigorously, and the course was ready for play by May 1974. "That was my first experience with charcoal," Charlie mused.

We talked at length about last Summer and the contaminated fungicide that was applied to seven fairways, totalling eight acres. All that turf had died. I had also used nine cases of the same brand at the same time Charlie sprayed his turf, but I had been lucky enough to get a good batch. I felt a little privileged to see how Charlie had handled a problem that I could have easily been faced with. In retrospect, he reports that everything turned out for the best. His club fully supported him and his recovery program, and Charlie admitted that the fairways in question were candidates for major renovations anyway. He did say that he could have done without the shock and soul-searching caused by all that dead turf in August.

Now the fairways look great, the dead turf having been stripped, charcoal applied, and overseeded with turf-type perennial ryegrasses. "That was my second experience with charcoal," said Charlie. He stressed the importance of keeping good records and urged everyone to note the lot number of the pesticide being used on spray records. He said he would have had great difficulty in tracing the contamination problem if he hadn't been recording those lot numbers.

Thanks for the advice and the visit, Charlie. Here's to not having any more charcoal experiences—for any of us.

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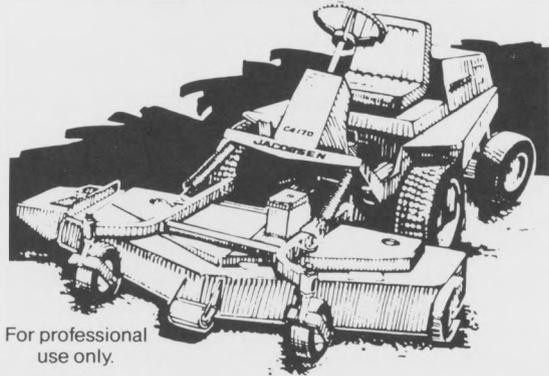
Probably the most important part of a landscape is ground covers in beds. True professionals have dubbed this as the "workhorse of the industry," even though ground covers are not used as correctly as they could be.

There are two major types of ground covers—temporary and permanent. Temporary ground cover would be organic-type mulches, which should be used just for that purpose—temporary!! Permanent ground covers, which would be very important in the landscape, seem to be overlooked the most. Permanent ground covers help aid the constant fight against weed encroachment in beds. These ground covers could be stone mulch with a weed barrier underneath (black plastic works fine), or more common is using low-growing plants, of which there are many to choose from. The main consideration in choosing your ground cover plants would be to match the needs to the environment they will be used in. An example would be using *Pachasandra terminalis* in a well-protected area that has filtered sunlight and is a well-drained soil, whereas low-growing juniper would do well in open sunny areas well drained with less protection from the elements. I cannot stress enough the good use of permanent ground covers in the landscape. They are as important financially as they are aesthetically.

So look around your clubhouse and course area and ask yourself, "Where can I use the ground covers more effectively in the landscape bed areas?"

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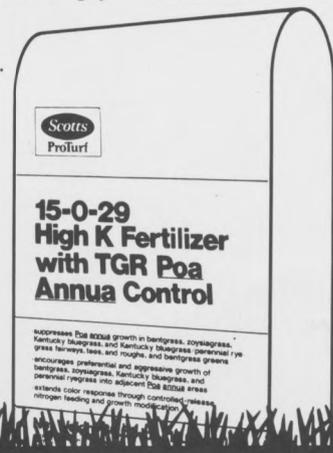
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PERSONAL PROFILE

THOMAS I. GRIMAC

Thomas I. Grimac often serves as acting mayor of New Jersey's smallest borough—Tavistock Country Club. The borough is 183 acres, and, besides the club house and maintenance buildings, has only four residences.

Grimac, however, is better known as a turfgrass manager at Tavistock. Officially, his title is certified golf course superintendent. The course is a prestigious private golf club in South Jersey—less than a dozen miles from the center city of Philadelphia. Grimac is a native of the area, and a super golfer who chose the role of superintendent rather than career as a pro. "I loved the work from the beginning," he says. For him, the beginning was Summer employment during school years at this same course.

At Tavistock CC, the membership believes in upgrading the course on a continuing basis, which is one reason Grimac has "found a home." "Here," he says, "the job is more than turfgrass maintenance. It includes a major capital improvements program." A ten-year long range program, which may well be completed in seven years, is in its second year. Plans are to spend up to \$100,000 yearly to reach club goals, these expenditures over and above the regular grounds

maintenance budget. The schedule includes rebuilding and adding tees, new bunkering, new fairway turf, automatic irrigation, practice facilities, and other less extensive projects.

After high school, Grimac attended Lehigh and majored in environmental studies, and later did work at Rutgers University in Camden. But by this time, his part-time work had steered him to turfgrass management. He graduated second in his class in turfgrass management at the Stockbridge School of Agriculture at Amherst, Mass., where he studied under the now retired and nationally known head of the school, Dr. Joseph Troll. "I found working a few years before attending school to be very helpful. I believe I got much more from the formal turfgrass study because of my early work experience."

Grimac credits Dr. Rich Hurley, now with Loft's Seed Company, with developing his interest and competence in turf management. Dr. Hurley was golf superintendent at Tavistock when Grimac began his Summer work and encouraged him to continue this as a career. "I owe a lot to Rich Hurley," he says. Grimac began as full superintendent of Tavistock in 1980.

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Special lawn pest problems

Compiled by Dr. Louis Vasvary, Rutgers University

ANTS

Several types of ants construct their nests in lawn areas and may destroy roots as well as feed on seeds, thereby preventing establishment of good stands of grass. In addition, the hills that mark nest entrances may not be desirable in many situations. Diazinon 50WP, 4E or AG500, Dursban 2E, 4E, or Mavrik at the sod webworm rate can be applied for ant control. Carbaryl (Sevin) at 10.9 pounds AI/A has provided good ant control at the following rates per 1,000 sq. ft.: 4F use 1/2 pint; 80S use 1/4 lb.; 50WP use 6.4 oz. If only a few nests are present, treat them individually. Repeated applications at monthly intervals may be necessary in widespread or difficult situations.

BILLBUGS

Occasionally, lawn billbugs become a problem in New Jersey. Baygon, diazinon or Oftanol can be used for control. The rates for Baygon 70% WP are 7 pounds of AI/A or 4 oz./1,000 sq. ft. Use Diazinon AG500 or 4E at 4 fluid ounces and 50% WP at 4 ounces per 1,000 sq. ft. Oftanol is applied at the rate of 40 pounds of 5% granular per acre or 0.9 pounds per 1,000 square feet. Treatments are made in May.

FLEAS

During the Summer, home lawns frequently become infested with fleas. Control can be achieved with carbaryl at the rate of 8 ounces of 50% wettable powder in 3 gallons of water per 1,000 square feet of lawn OR chlorpyrifos (Dursban) or Mavrik at the sod webworm rate. Follow application directions indicated on label.

GROUND-NESTING WASPS

Locate the nest opening and wait until late evening or night before attempting control measures. Apply 5% carbaryl dust or granular formulation into the nest opening and cover the hole with a shovel full of moist soil. Professional applicators can apply bendiocarb (Dycarb, Ficam W or Turcam) or diazinon dust or granular formulation.

LEAFHOPPERS

Many species of leafhoppers infest lawns. Control measures are usually unnecessary. However, if leafhoppers become a nuisance or damage is evident, control can be achieved by applying diazinon, carbaryl, bendiocarb (Dycarb, Ficam W or Turcam) or Mavrik.

MOLES

In general, trapping is an effective method of control in small residential areas; results may be disappointing unless the habits of the animal are taken into consideration. If moles are deprived of their food, they will move to other areas. Grubs and other soil insects in lawn areas can be controlled by use of insecticides. Dycarb, Ficam W, Turcam, Dylox, Proxol, Triumph, or Mocap can be used for white grub control. Follow insecticide applications with at least one-half inch of water. Immediate effects cannot be expected as several weeks may elapse before mole activity ceases.

NEMATODES

Nematode feeding injury can be responsible for slower growth of turfgrass plants and very shallow root systems when population levels are high. Nematode feeding injury will not kill the plant, but will weaken the grass and make it less able to survive stressful conditions.

Turfgrass can tolerate very high nematode population levels during periods of the year when weather conditions are favorable for the plant (Spring and Fall). Where nematode control is attempted, treatments should be applied in late May or June to promote deeper rooting. Plants with a more extensive root system will survive summer drought conditions better than shallow rooted plants.

Nematodes are not uniformly distributed in the soil, but they occur in "pockets." To determine if nematodes are troublesome, 10-12 one-inch soil cores should be collected to a depth of four to five inches. The soil cores should be placed in a plastic bag and kept out of direct sunlight. The plastic bags should be stored in a cool place until shipped. Contact your local County Agricultural Agents for detailed instructions.

To sample a poor growing area, collect soil plugs from the transition zone between the healthy and unthrifty turf. Samples collected from the center of a dead area will generally have a reduced level of nematodes present because of the reduced food supply.

This article was provided as a handout at the recent Rutgers Turfgrass Research Field Day.

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Virus kills gypsy moth caterpillars

HAMDEN, CT—Scientists have made significant advances on a safe method of controlling the gypsy moth caterpillar, which strips the leaves from a million acres of U.S. forest every year, according to an article which appeared recently in the "Asbury Park Press."

"Using a virus that is found in the wild and known to kill only gypsy moth caterpillars, scientists with the U.S. Forest Service have created a spray that destroys many of the insects and drastically affects the moths' reproductive success the following year.

"Research is continuing on a protozoa native to Europe and introduced by federal officials on a test basis in Maryland. The protozoa, a single-celled organism, weakens gypsy moth caterpillars, hampers their reproductive success and leaves them more vulnerable to diseases like the virus.

"Researchers emphasize that the virus-based pesticide, which the government has named 'Gypchek,' is not perfected, and a reasonably priced and practical commercial product could be two years away.

"The virtue of the virus and the protozoa," according to the article, "is that both harm only gypsy moth caterpillars. Other pesticides widely used against gypsy

moth caterpillars will kill other insects as well, including beneficial ones like butterflies or honey bees. Use of some of them, notably powerful chemicals such as Sevin, has been controversial.

"Even groups that often are critical of pesticide sprays are comfortable with the viral pesticide," according to the article.



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ENVIRONMENTAL VIDEO AVAILABLE

Armand LeSage of White Beeches Country Club, a member of the GCSAA Government Relations Committee, has a copy of the Hall-Kimbrell video, entitled "Environment: A Commitment to Compliance." This video was shown at the May GCSANJ meeting. For availability, contact Armand at (201) 262-3365.

TALK IT UP!

The 25th Annual Turfgrass Equipment Irrigation and Supplies Field Day is to be held October 3 at Rutgers Stadium and Golf Course in Piscataway. Tell everyone you know in the turf, golf, cemetery, landscape, sod farmers, arborists, and ornamental businesses that this is "The Show" to attend and is "The Fundraiser" for the GCSANJ. Our Association needs your support! Talk it up and attend! For further information, contact: **Len Forlenza at (609) 871-2055** or **Dr. Henry Indyk at (201) 932-9453**.

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Revenue from these sales has more than doubled since 1984 with a farm value of over \$52 million reported in 1988. Acreage dedicated to perennial ryegrass seed production has doubled from 44,000 acres in 1977 to over 90,000 in 1988. That's 150 square miles of land devoted to turf seed production!

A lot of this growth is driven by new varieties of ryegrass which are better adapted for today's demanding turf market. Breeders are looking for insect and fungal tolerance, some through the use of endophytes. These are beneficial fungi that live in the grass and help the turf. Drought and wear tolerance are other features of these improved varieties. A good number of these new varieties were shown at the Rutgers Turfgrass Research Field Day. (See additional story in this issue of "The Greenside.")

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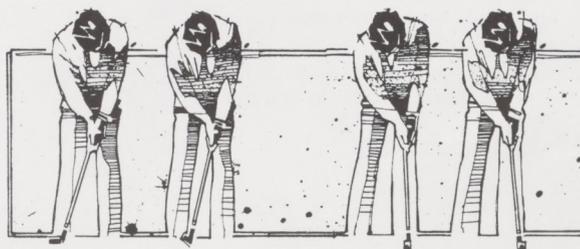
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1.5% Ammoniacal Nitrogen		MAGNESIUM (Mg)	0.8%
AVAILABLE PHOSPHORIC ACID (P ₂ O ₅)	2.0%	MANGANESE (Mn)	0.06%
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Don't mess with Federal trees

A federal jury convicted Maryland businessman Isaac Fogel of cutting more than 100 trees on national parkland adjacent to his home in what prosecutors said was an attempt to enhance his view of the Potomac River and the value of his property. The jury returned the verdict after deliberating less than three hours, rejecting claims by Fogel that professional tree cutters ignored his instructions and were to blame.

The tree cutters hacked down scores of oaks, locusts, and maples as well as several rarer ironwood and persimmon trees along the popular C&O canal and nearby Potomac River in February 1985. Shortly thereafter, prosecutors said, Fogel put the property up for sale, touting its "river view" in real estate advertisements.

Prosecutors portrayed the Fogel case as more than a simple tree-cutting caper. Assistant U.S. Attorney David P. King told the jury, "It's about development versus preservation of natural resources." Breckinridge L. Willcox, chief federal prosecutor in Maryland, said his office "will not stand idly by while homeowners bordering on federal parks take it upon themselves to improve their view or otherwise enhance the value of their property by destroying parkland."

Fogel was charged with a misdemeanor count of destroying government timber and a more serious felony count of "knowingly converting" the right of ownership of the trees to himself. Fogel faces up to 11 years in prison and \$350,000 in fines.

(Excerpted from "The Washington Post," Feb. 16, 1989)

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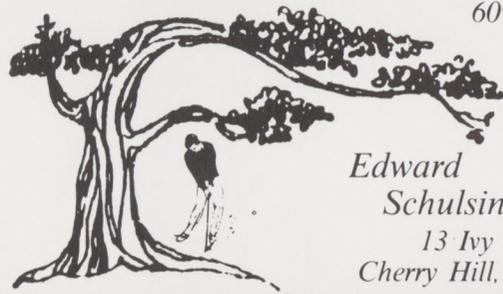
Little Silver proposes lawn ordinance

An ordinance recently approved by the Little Silver Borough Council requires that homeowners mow their lawns or pay a fine.

Under the residential property maintenance ordinance, lawns must be less than a foot high. Homeowners with taller grass are subject to a minimum fine of \$100 a day and a maximum fine of \$500 a day.

Unmowed lawns are becoming "too prevalent" a problem, Mayor Anthony T. Bruno said.

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