

# THRU THE GREEN

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**OUR OBJECTIVE:** The collection, preservation, and dissemination of scientific and practical knowledge and to promote the efficient and economical maintenance of golf courses.

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# PRESIDENTS MESSAGE

The annual meeting of the GCSAA in Anaheim will be one of the most important events in the history of the National organization. The outcome of the voting by the membership will determine the future of the GCSAA. I urge all of our members to give a great deal of thought to the proposed bylaw changes. The current method of chapter and state voting will determine the outcome of the voting process. As chapter president and the voting delegate responsible for our combined vote I need your input. I have my own thoughts on how the ballots should be cast. I am prepared to present my views to those who are interested. But my job will be to cast a ballot that is representative of our membership. It will be split if necessary.

To facilitate input from the membership, the January meeting held at Crow Canyon on the 18th will be devoted to this topic. Those of you who feel strongly either pro or con are encouraged to attend and be prepared to present your opinion.

Time for some reminders. Participants in the GCSAA Tournament are reminded to consider representing our chapter in the National competition. If you are interested, please contact Mike Garvale.

The GCSA of Northern California does offer free consultation by two Certified Golf Course Superintendents for those in need of the service. Sometimes the advice of a "visiting expert" can help you convince your greens chairman that you soil greens or ancient equipment really do need replacement.

The California Fairways Magazine has proved to be a very valuable asset to the State Chapter. Revenues received from the magazine are providing a much needed source of funding. A great deal of the profitability of the magazine is dependent upon reducing the cost of postage.

If you haven't filled out the reader service card and sent it in please do so. It will only take a minute and the postage is paid. Your response is vital to the continued success of our magazine.

The Golf Course Superintendents Institute at Asilomar was well attended and enjoyed by the participants. My special thanks to Dr. Ali Harivandi and Brian Bagely for making it a special three days. I would also like to thank the commercial sponsors for their participation. Profits generated from the Institute are instrumental to our continued support of research which is carried on in Northern California. Once again thanks to all involved.

I hope you decided to join us at the Doubletree Hotel for our Annual Christmas Party and Larry Lloyd Memorial Tournament. Mr. and Mrs. Claus took time out of their busy Holiday Schedule to stop by with special gifts and as always were a big hit.

Wishing all of you and yours a Merry Christmas and a Rainy New Year.

Rod

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Dale L. Siemens  
President

on't from page 1)

Progress reports, including the rating data, are released annually. Final results and recommendations will be available in 1993.

In addition to significant financial support of this project by the City of Sunnyvale Municipal Golf course, the following agencies have also contributed financially to the construction and maintenance of the project: O.M. Scott, Pacific Sod, R.V. Cloud, Shelton Transfer, Sierra Pacific, United Agri Products and WestStar.

**Results and Discussion**

The following results are preliminary. Overall quality ratings are the means of six observations. The final ratings will be the mean of thirty-six observations. Density and percent of ground cover are means of three observations while the final ratings will be means of twelve observations. Thatch ratings are one observation and annual bluegrass invasion ratings are the mean of two observations.

**SOIL SITE, TEE**

**Turf Quality** - Results from the site managed as a tee indicate that colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518) and the browntop variety (Egmont) are inferior to the creeping varieties with overall quality ratings of 4.4, 4.8, 5.3, 4.0 and 5.6 respectively. The top performing

creeping varieties are Carmen, Cobra, Putter, Regent and TAMU 88-1, with overall quality ratings of 7.1, 7.0, 6.9, 6.8 and 6.8, respectively.

**Thatch Development** - Results from the soil site managed as a tee indicate the colonial bentgrass varieties (Tracenta, Bardot and Allure), a the dryland variety (BR 1518) and the browntop variety (Egmont) develop the least amount of thatch with depths of 0.55, 0.56, 0.76, 0.46 and 0.58 inches, respectively.

**Annual Bluegrass Invasion** - Results from the soil site managed as a tee indicate colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518), the browntop variety (Egmont) and the creeping varieties (Emerald, National and Seaside) have the highest percentage of annual bluegrass with 20.0, 19.2, 12.5, 15.0, 15.0, 21.7, 21.3 and 15.8 percent (%), respectively. The creeping varieties (Penneagle, Putter, Cobra, Pennncross and TAMU 88-1) have the lowest percentage annual bluegrass invasion with 1.3, 2.0, 3.7, 5.0 and 5.0 percent (%), respectively.

**SOIL SITE, GREEN**

**Turf Quality** - Results from the soil site managed as a green indicate that the colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518) and the browntop variety (Egmont) are inferior to the creeping bentgrass varieties with overall quality ratings of 4.2, 4.7, 4.6, 3.4 and 5.2, respectively. The best performing creeping bentgrass varieties are 88 CBL, SR 1020, Pennlinks, Carmen and Lopez with overall quality ratings of 7.1, 7.1, 6.9, 6.7 and 6.7, respectively.

**Thatch Development** - Results from the soil site managed as a green indicate that the colonial bentgrass varieties (Bardot and Allure), the dryland variety (BR 1518), the browntop variety (Egmont) and the creeping variety

(Cobra) develop the least amount of thatch with depths of 0.93, 1.05, 0.58, 0.97 and 0.97 in., respectively. The creeping varieties (Pro/Cup, Emerald, Pennlinks, Putter and Lope) have the most thatch developed with 1.37, 1.30, 1.26, 1.22 and 1.22 in., respectively.

**Annual Bluegrass Invasion** - Results from the soil site managed as a green indicate that the colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518), and the creeping variety (Seaside) have the highest percentage annual bluegrass invasion with 46.7, 40.0, 38.3, 53.3 and 40.0 percent (%), respectively. The creeping varieties (SR 1020, Pennlinks, Pro/Cup, Carmen and Putter) have the lowest percentage annual bluegrass invasion with 2.3, 4.3, 4.3, 4.3 and 5.0, respectively.

**SAND SITE, GREEN**


**Turf Quality** - Results from the sand site managed as a green indicate the colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518) and the browntop variety (Egmont) are inferior to the creeping varieties with overall quality ratings of 4.2, 4.4, 4.1, 3.4 and 5.5, respectively. The best performing creeping varieties are Cobra, SR 1020, TAMU 88-1, Pro/Cup and MSCB-8 with overall quality ratings of 6.6, 6.4, 6.4, 6.3 and 6.3, respectively.

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# THE GAME OF GOLF IS PLAYED ON GRASS

**Thatch Development** - Results from the sand site managed as a green indicate the colonial bentgrass varieties (Tracenta and Bardot), the browntop variety (BR 1518) and the creeping varieties (UM 84-01 and Lopez) develop at the least amount of thatch with depths of 0.87, 1.02, 0.75, 0.79 and 0.80 in., respectively. the creeping varieties TAMU 88-1, cobra, Emerald and SR 1020 have the most thatch development with 1.09, 1.07, 1.05 and 1.05 in., respectively.

**Annual Bluegrass Invasion** - Results from the sand site managed as a green indicate the colonial bentgrass varieties (Tracenta and Allure), the dryland variety (BR 1518) and the creeping varieties (National and 88 CBE) have the highest percentage annual bluegrass invasion with 36.7, 45.0, 46.7, 35.0 and 26.7 percent (%), respectively. The creeping varieties (SR 1020, Putter, Cobra, TAMU 88-1 and Pennlinks) have the the lowest percentage annual bluegrass invasion with 3.7, 4.0, 4.0, 5.0 and 6.0 percent (%), respectively.

In summary creeping bentgrass (*Agrostis palustris* Huds.) has better quality, more thatch development and less annual bluegrass invasion than other bentgrass species at this location. the increased thatch development in creeping species is undoubtedly due to its stoloniferous nature. Less thatch development was observed on the sand site than on the soil sites for all bentgrass species.

Since the available data is limited, the results reported here should be viewed only as preliminary. Varieties may perform differently in the years to come as they are subjected to a wide range of climatic, management and pathogenic stresses. Accordingly, no specific recommendations on choosing any of the tested varieties can be given at this time.

<sup>1</sup> Research Associate and Turfgrass Advisor, respectively; University of California Cooperative Extension

When the golf course is in good shape, everything at the club seems to go well. How obvious...or is it!

Why is it, then, that today's golf course superintendent must compete—perhaps struggle is a better word—for the machinery, manpower, materials, and the “the budget” to do his or her job? Sometimes clubs and courses appreciate the obvious. If the golf course is in good shape, the rest of the facility hums. People bring guests who pay guest or green fees. This factor impacts favorably on the food and beverage portion of the club, and it helps the facility's cash flow. Members and guests buy logo shirts and sweats, benefiting the golf professional. Everyone is happy and the club or facility is healthy.

Consider what happens, though, when several greens or fairways are lost, tees are divoted and devoid of turf, the roughs and stream banks are not well cut, and trash, tree limbs, and litter are scattered about the course, who is happy then? Would you bring guests or sponsor business outings at your club or course? Probably not, or only with a multitude of apologies and excuses.

With less play, food and beverage sales suffer and golf carts go unrented. Golfshirts remain on the shelves and everyone begins to rumble. Attention is then focused on you guessed it, the golf course superintendent.

Do you think a golf course superintendent wants to present a shabby golf course? Is that individual, as a professional, pleased with what he or she sees out there? No, not in the least. so why does it happen?

I submit it often is a question of budget priorities. The golf course is not getting its fair share of the golf course income.

Specifically, what percentage of course income is being used to maintain the golf course? Do you think it is 20%. 33% or 50%?

Figure it out. If the club has an income of, say, \$2 million per year and the golf course maintenance budget is \$400,000 per year, then the maintenance budget is 20% of the entire club or golf course income. Twenty percent does not sound like very much, and often it isn't enough. Where is the other 80% going?

Shouldn't it be a goal to allow the golf course to be maintained at a level where all the departments are humming and everyone is happy?

Only you can know. It bothers me that course maintenance budgets often do not receive their fair share of the club income, and when the course is not perfect, the superintendent is criticized. I submit the real culprit is the budget policy—not providing what is needed to do the job well.

Perhaps a better sales pitch is needed. I hope these comments will help people realize the obvious...the game of golf is played on grass, and providing properly for its maintenance should be a course's number one priority.

Article written by Stanley J. Zontek, Director, Mid-Atlantic Region USGA Green Section. Article taken from Hole Notes, Minnesota GCSA, June 1992.

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## CHILD CARE COOPERATIVE

Those NorCal members planning to attend the 1993 GCSAA conference in Anaheim with their families are invited to take part in a child care coop. This idea surfaced around dinner one evening in New Orleans last year and I would like to follow it through.

This attempt is to allow members and their spouses the freedom to go out for a quiet (childless) evening once or twice while still having the kids with you for your stay in Anaheim. Ideally I can pair small groups, say 3,4, or 5 children together so there won't be a burden to the various hotels. If you wish to join this group you should expect to do your share watching some other children.

Please call me at 510-653-6789 ext. 118 if you wish to join this Freedom Group. I will attempt to group kids by ages and hotels if possible.

Randy Gai

## A LOOK AHEAD

January 18	Crow Canyon Country Club
February 19	Green Valley Country Club
March	USGA/NCGA Meeting
April	Diablo Creek Golf Course
May 10	Rossmoor Golf Course
June June 13,14	Open CGCSA Meeting
July	Supt./Pro
August	Open
September	Windsor Golf Club
October	Brookside Country Club Joint meeting with Sierra-Nevada
November	Institute
December	Christmas Party



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# BALANCING HYDRAULICS BASED ON ALLOTTED TIME

It has been a few months since I've put together an article for "Thru The Green", so I'll try to pick up where I left you hanging.

The last few articles I've written have concentrated on gathering the kinds of data that you may find useful when organizing your irrigation control programming schedule. We have dealt with sprinkler precipitation rate calculations, programming control zone separation and ranking by importance, development of seasonal baseline sprinkler schedules for each type of control zone, organization of control zone schedules into programming groups, and rough calculations of the time required to irrigate your course vs. the time available for irrigation.

Because each golf course is different in size and method of irrigation control, you may have found that some of this data does not apply to your situation. My main intent in writing each of these articles has been to inspire thought about the interconnection between the environmental factors present at your course and the physical factors of your irrigation system that you must control in order to water your turf effectively.

Regardless of what type of control system you have, you are limited by two opposing factors when you get down to the nitty gritty of setting up your program; how much time do you have available to water and how much water can you push through your system at any given time. In the August issue I described some methods of determining how much time you have available to irrigate during various seasonal conditions. The amount of water your irrigation system can provide at a given time is usually dependent on four factors: your water source, your pump station, your mainline pipe network, and your control system.

Your water source and your pump station must be compatible with each other to ensure efficient water distribution and energy usage. Most pump stations are designed to operate at a high efficiency based on a maximum volume of water provided at a specific pressure increase. If you try to distribute a volume of water that is greater than the pump station is designed for, it may not provide the pressure increase you need to run your system. Conversely, if your pump station doesn't have multi-stage capabilities, you may be wasting energy (and dollars) if your system is regularly running at a lower volume than the maximum efficiency range that the pump station is designed to achieve.

Your mainline pipe network is designed to accommodate a certain volume of water without producing excessive water velocity and friction loss between the water source/pump station and the sprinkler outlets. The faster the water moves through the pipe, the greater the pressure loss due to friction over a given distance. The smaller the pipe diameter, the faster a given volume of water will flow. Therefore, you need to control the volume of water moving through the various legs of mainline pipe that make up your irrigation system. Most manufacturers of Polyvinylchloride (PVC) pipe and fittings recommend that water velocity be controlled so that it does not exceed 5 feet per second (F.P.S.) under normal operating conditions. Engineering data that describes typical velocity and flow characteristics for different types and sizes of pipe are available from most pipe manufacturer representatives or distributors. An example of maximum flows (to maintain a 5 F.P.S. or lower velocity) in various sizes of PVC class 200 PSI pipe are as follows\*:


- 2" @ 55 GPM = 4.85 F.P.S.
- 2 1/2" @ 80 GPM = 4.82 F.P.S.
- 3" @ 120 GPM = 4.88 F.P.S.
- 4" @ 200 GPM = 4.92 F.P.S.
- 6" @ 425 GPM = 4.82 F.P.S.
- 8" @ 700 GPM = 4.68 F.P.S.

\*Data Source: Buckner Irrigation Systems Design Manual, First Edition 1988

You need to be aware that pressure loss accumulates over the distance that water travels through the pipe. If your system is engineered correctly, the pipe network is sized based on a "maximum assumed flow" within the pipe over the entire distance, and elevation change, that the pipe routing encounters. This "maximum assumed flow" is estimated by determining how many sprinklers will be operating at any given time along each leg of mainline on your course. And as I indicated before, the number of sprinklers that need to run at any given time is dependent on many zones you have, how much time each zone must run, and how much time you have available to water.

Next Month: Wrapping up this series on Irrigation Programming (hopefully)....

Doug Macdonald is an associate design consultant with Russell D. Mitchell & Associates, Inc., an irrigation system design and consultation firm in Walnut Creek, California.



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# AUMANN'S NORCAL NEWS

Al Schlothauer has left Palo Alto Muni Golf Course as the temporary Supt. to become the Supt. at Northgate Golf Course in Reno, Nevada. Al will be working under Ron Wrest. The Golf Course is owned and operated by the Reno-Sparks Convention Authority...**Mike Leach** has accepted the Supt./Director of Golf Position for the City of Pacific Grove. He is in charge of the Pacific Grove Golf Links. He left Briteon Crest GC in Fresno to accept his new position...**Randy Damon** has accepted the position of Supt. at Pebble Beach Golf Links replacing **Brad Hines** who moved on to Troon CC in Arizona. Randy was the Supt. when **Jeff Markow** at the Vintage Club in Palm Springs prior to his move. **Jeff Markow** recently accepted the position of Supt. at Cypress Point Golf Club in Pebble Beach...**Curtis Black** has accepted the Supt. position at Sunnyvale Municipal Golf Course replacing **Ken Sakai**. Curtis was working for the City of Sunnyvale Parks Department prior to his transfer.

# GOLF COURSE WASTEWATER SYMPOSIUM


The United States Golf Association, in cooperation with the American Society of Golf Course Architects, Golf Course Builders Association of America, Golf Course Superintendents Association of America, and National Golf Foundation, announces a Golf Course Wastewater Symposium on March 4 and 5, 1993. The Symposium will be held at the Newport Beach Marriott Hotel in Newport Beach, California.

Effluent water from sewage treatment plants and wastewater from other sources has been playing an increasingly important role in golf course irrigation as the use of potable water for irrigation has come under public scrutiny. The Wastewater Symposium will bring together

turfgrass managers, engineers, agronomists, golf course architects, equipment manufacturers, and professionals from other disciplines who have a role in planning, designing, and operating wastewater irrigation systems.

The symposium will provide practical answers to questions concerning the use of effluent water for turfgrass irrigation and will encourage greater acceptance of wastewater irrigation as a significant means of conserving our most important natural resource. An indexed, peer-reviewed proceedings with valuable summaries, references, and appendices will be published from the symposium.

For more information on the event, contact Dr. Michael Kenna (405-743-3900) or Dr. Kimberly Erusha (908-234-2300) at the USGA.




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