daily and I am available to answer questions from our regular members and daily-fee players. We also keep a clubhouse bulletin board with basic information on repairing ball marks and divots and course etiquette posted to educate our guests. I also promptly return phone calls from homeowners who live around the course.

I touch base frequently with the head pro John Pohira or his assistants Mike Hess and Becky Kaye. They keep me informed of the good and bad comments from the customers and tell me about any special events that are being planned. Our maintenance schedule is pretty flexible, so any cultural practices only need a minimum of a week's notice to plan tee times for closing nine holes for a half day.

Our maintenance shop is located behind the ninth green and near the first tee. It is also visible from the clubhouse and parking lot so keeping the shop and the surrounding area clean and neat is a top priority. Fertilizer and chemical rooms are kept cleaned and locked. All equipment is cleaned daily as it returns to the shop.

The employee bulletin board at the shop has all the required federal, state and local notices posted including wage and hour, worker's compensation, OSHA and Hazardous Materials/MSDS information. The FCCI person does a safety inspection of our shop every two or three months and the Florida Department of Agriculture inspector checks our pesticide records and does fertilizer and seed analysis when requested.

The planned work schedule for the crew is posted daily by the time clock. I talk with my mechanic, spray tech, landscape specialist and other key persons daily to give them a chance to ask any questions or report their observations on any course problems.

I maintain a very active role with my professional associations. I usually attend local monthly chapter meetings, state association meetings, educational seminars and the annual GCSAA Conference and Show. My spray technician and other key crew members usually attend the Mid-Florida Turf Conference. All education is usually paid for or reimbursed by the owner and we are encouraged to attend as our schedule permits.

I think I have been very visible in the industry by playing other golf courses, attending meetings and seminars, and serving in local and state associations. No matter what the activity, I always learn new ideas and information. Every operation needs a little tweaking now and then so I'm always listening and learning to do my job better.

A positive image is something every type of superintendent can achieve at their individual courses no matter how big or small the budgets are.

> JOE ONDO, CGCS Winter Pines GC





Triplex Greens Mower Attachment Storage Rack

Hey Jimmy! Where's the third verticut reel for the triplex!? The 'Super' asked me to replace the reels with the vertical mowing attachments so they can verticut the putting surfaces tomorrow.

I don't know Billy, I put it with the other two... I think.

Sound like a conversation that might be overheard in your repair shop? For many overworked equipment technicians, this scenario is all too common. Kim Ellis,

the senior equipment technician at Olde Florida Golf Club in Naples, was also frustrated with the storage of the extra reels and vertical mowing attachments for the club's Toro 3200 triplex.

The club owns only one triplex greens mower, which is primarily used to mow the driving range tees but it is also occasionally used to vertical mow greens on the golf course. Consequently, there are numerous times throughout the year when the reels must be switched with the vertical mowing attachments. Therefore, one of the challenges Kim faced was where to store the extra sets of reels when they were not in use. In an effort to make the task of switching the reels more convenient and easier, Kim designed a vertical storage rack that can be rolled to the site when it is time to make a switch on the triplex.

Having the attachments stored vertically — off the floor — also provides a safety

benefit. Stored on the floor, the reels could create a safety hazard for an employee who might accidentally trip on the attachments. Also, by storing the reels off the floor, on a vertical rack, they are less likely to be damaged by another piece of machinery.

The rack Kim constructed was a modified version of a similar one that he had read about in *Golf Course News*. The rack holds three reels on each side at heights of 15, 30, and 45 inches off the floor. The overall height of the reel storage rack is 56 inches. It was decided that anything taller than this could result in a potential risk for an employee attempting to remove the reels that would be stored above their head. The base of the storage rack measures 32 by 16 inches and the arms that support the reels are 13 inches long, at a 17 degree angle from level and are attached to the center support (*see picture*).

The metal used to construct the piece of equipment was $1 \times 1 \times 1/8$ inch, and $2 \times 2 \times 1/8$ inch square steel tubing. At the base of the rack are four lockable, heavy-duty swivel casters that enable the equipment repair staff to roll the rack to the location of the triplex when it is necessary to switch the attachments. After the design was complete, the metal was welded in place. The final step was a coat of primer followed by several coats of Rust-oleum spray paint.

The total cost of the unit, not including the in-house labor, was less than \$250.

Darren J. Davis Golf Course Manager Olde Florida Golf Club



Ant Control

If you have trouble with ants in your irrigation boxes try using deodorizing urnial blocks in them. I place a standard 4 oz. block in the bottom of each control box on a plastic lid of some kind. They last about one month. Don't place them directly on the ground or concrete base, they won't last as long.

You can buy them from any janitorial supply house by the case without screens for around \$60. We have been using them for about eight months and we have not had any problems with insects in the control boxes during that time.

Aerification Holes

If you use a deep tine aerifier on your greens and have a hard time filling the holes, you might want to give this a try. After aerification we drag with a traditional steel drag mat. Next we verticut in one or two directions. Then we redrag the greens, but this time we use a set of brushes. This method has worked very well for us in helping to fill up the deep holes.

> Jim Goins Hollybrook G&TC





Our thanks to Edgar Degas - "A cotton office in New Orleans"

When you're searching for the ultimate – look no further...



STEWARDSHIP

Environmental Principles for Golf Courses in the United States Practical Steps All Golf Courses

Can Take to Enhance the Environment

(Part 2 in a series)

n the last issue we reviewed the origin of the Golf and The Environment coalition and how both sides fashion a working document called *The Environmental Principles for Golf Courses in the United States.* In this article we will visit practical concepts contained in Part III - Voluntary Principles.

Planning and Siting

1. Developers, designers and others involved in golf course development are encouraged to work closely with local community groups and regulatory/permitting bodies during planning and siting and throughout the development process. For every site, there will be local environmental issues and conditions that need to be addressed.

2. Site selection is a critical determinant of the environmental impact of golf courses. A thorough analysis of the site or sites under consideration should be completed to evaluate environmental suitability. It is very important to involve both the designer and a team of qualified golf and environmental professionals in this process.

3. Based on the site analysis and/or regulatory review process, it may be determined that some sites are of such environmental value or sensitivity that they should be avoided Other less environmentally sensitive or valuable sites may be more suitable or even improved by the development of a golf course if careful design and construction are used to avoid or mitigate environmental impacts.

4. The presence and extent of some types of sensitive environments may render a site unsuitable or, in some cases, less suitable for golf course development.

Examples include, but are not limited to:

• Wetlands

Guidelines for...

- Planning and Siting
- Design
- Construction
- Maintenance
- Facility Operations
- What Golfers Can Do

• Habitat for threatened or endangered plant or animal species

Sensitive aquatic habitats

5. There may be opportunities to restore or enhance environmentally sensitive areas through golf course development by establishing buffer zones or by setting unmaintained or low-maintenance areas aside within the site.

6. Golf course development can be an excellent means of restoring or rehabilitating previously degraded sites (e.g., landfills, quarries and mines). Golf courses are also excellent treatment systems for effluent water and use of effluent irrigation is encouraged when it is available, economically feasible, and agronomically and acceptable.

Design

1. When designing a golf course, it is important to identify existing ecosystems. Utilizing what nature has provided is both environmentally and economically wise. Emphasizing the existing characteristics of the site can help retain natural resources, allow for efficient maintenance of the course and will likely reduce permitting and site development costs.

2. A site analysis and feasibility study should be conducted by experienced professionals. The identification of environmentally sensitive areas and other natural resources is important so that a design can be achieved that carefully balances environmental factors, playability, and aesthetics.

3. Cooperative planning and informational sessions with community representatives environmental groups and regulatory agencies should be part of the initial design phase. Early input from these groups is very important to the development and approval process. This dialogue and exchange of information should continue even after the course is completed.

4. Native and/or naturalized vegetation should be retained or replanted when appropriate in areas that are not in play. In playing areas, designers should select grasses that are best adapted to the local environmental conditions to provide the necessary characteristics of playability yet permit the use of environmentally sustainable maintenance techniques.

5. Emphasis should be placed upon the design of irrigation, drainage and retention systems that provide for efficient use of water and the protection of water quality. Drainage and stormwater retention systems should, when possible, be incorporated in the design as features of the course to help provide for both the short and long term irrigation needs of the maintained turf and the unmaintained areas of the course.

6. Water reuse strategies for irrigation should be utilized when economically feasible and environmentally and agronomically acceptable. It is important that recycled water meets applicable health and environmental standards and

BANOL[®]FUNGICIDE

THE PROBLEM:

Pythium is the most common disease affecting overseeding programs in southern turf. There are three main types of seed and seedling diseases caused by Pythium fungi.

PYTHIUM DAMPING-OFF

This disease generally occurs in moist conditions from frequent watering during seed germination. It affects the new plants as they grow from seedlings, with symptoms appearing either pre or postemergence. Preemergent symptoms are seed decay, or necrosis of newly emerged roots (radicle). Postemergent symptoms include wilting and collapse of seedlings shortly after emergence. Foliar mycelium may occasionally be evident, but is usually more indicative of Pythium Blight.

PYTHIUM BLIGHT

This disease generally occurs during warm and humid weather. Initially small tan-to-bronze colored patches appear, with larger areas becoming blighted in a few hours. The most obvious evidence of this blight is foliar mycelium, which is easily detected in the morning hours (particularly if there is dew).

CROWN AND ROOT ROT PYTHIUM

This disease occurs in either cool or warm conditions, as long as it is moist. More commonly found in established turf, it can create problems for seedlings. In cool conditions, symptoms include yellow or reddish-brown patches (2-3" in diameter). In warm conditions, initial symptoms appear as tan, brown or bronze patches which may be confused with dollar spot symptoms at this stage. Severe infestations cause larger areas of turf to wilt or die under heat stress. No foliar mycelium is noticeable.

THE SOLUTION:

The use of BANOL® Fungicide in overseeding programs provides insurance for a successful fall transition of overseeded turf to maintain a playable surface.

 Banol provides broad spectrum fungicide control of many of the species of Pythium associated with Damping-Off, Blight, and Crown and Root Rot.

 Banol is rapidly absorbed by leaf, stem and root tissues, and quickly supplied to the entire plant.

Banol is safe to use on young seedlings.

 Banol provides excellent control of cool season Root Rot Pythium.

 Banol has never had a documented case of Pythium resistance, and is an excellent rotational disease resistance program partner.

• Banol can be used in a preventative or curative program.

BANOL USE IN OVERSEEDING PROGRAMS

Preventative programs for control of Pythium are preferred. Treatment timing can range from prior to overseeding through "green cast" and turf establishment. Preventatively, Banol should be used at 1 1/3 - 2 fl. oz. in 2-5 gallons of water per 1000 sq. ft. Curative rates are 3-4 fl. oz. of Banol in 2-5 gallons of water per 1000 sq. ft.

For Pythium Damping-Off and Crown and Root Rot Pythium, Banol works best when watered-in with about 1/ 4" of water.

For control of Pythium Blight, watering-in is necessary for control.

APPLICATION RATES		
TURFGRASS-AREA	BANOL-RATE	REMARKS
1000 sq. ft.	Preventative Treatment: 1 1/3 - 2 fl. oz. in 2-5 gal. of water	ESTABLISHED-TURF:-Apply as a preventative treatment during periods of high temperature and humidity favorable to the development of Pythium Blight and Crown and Root Rot Pythium.
		OVERSEEDED-AREAS: Apply after germination to control Pythium Damping-Off.
	Curative Treatment: 3-4 fl. oz. in 2-5 gal. of water	RETREATMENT:-Retreat at 7-21 day intervals if conditions remain favorable for disease development. Use the lower rate for the shorter interval and the higher rate for the longer interval within the application rate range. Under severe disease pressure conditions, use the highest recommended rate and
NOTE: Do not enter treated areas until spray deposit has been dried completely. IMPORTANT:-Always read and follow label directions carefully when applying any chemical. This information is provided in good faith without express or im- plied warranty. Buyer assumes all responsibility for safety and use not in accordance with label directions.		AgrEvo
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that special consideration be given to water quality issues and adequate buffer zones. Water reuse may not be feasible on some sites that drain into high quality wetlands or sensitive surface waters. Suitable soils, climatic conditions, groundwater hydrology, vegetative cover, adequate storage for treated effluent and other factors will all influence the feasibility of water reuse.

7. Buffer zones or other protective measures should be maintained and/or created, if appropriate, to protect high quality surface water resources or environmentally sensitive areas. The design and placement of buffer zones will vary based on the water quality classification of the surface waters being incorporated into the course.

Regulatory agencies and environmental groups can assist in the planning of buffer zones.

8. Design the course with sustainable maintenance in mind. The design should incorporate Integrated Plant Manage-

ment and resource conservation strategies that are environmentally responsible, efficient, and cost effective. Integrated Plant Management includes integrated pest management and emphasizes plant nutrition and overall plant health.

9. The design of the course should enhance and protect special environmental resource areas and when present, improve or revive previously degraded areas within the site through the use of plants that are well adapted to the region. Seek opportunities to create and/ or preserve habitat areas that enhance the area's ecosystem.

Construction

1. Use only qualified contractors who are experienced in the special requirements of golf course construction.

2. Develop and implement strategies to effectively control sediment, minimize the loss of topsoil, protect water resources, and reduce disruption to wildlife, plant species and designated environmental resource areas.

3. Schedule construction and turf establishment to allow for the most efficient progress of the work while optimizing environmental conservation and resource management.

4. Retain a qualified golf course superintendent/project manager early in the design and construction process(es) to integrate sustainable maintenance practices in the development, maintenance and operation of the course.

Maintenance

Plant Protection and Nutrition

1. Employ the principles of Integrated Plant Management (IPM), a system that relies on a combination of common sense practices of preventing and controlling pests (e.g., weeds, diseases, insects) in which monitoring is utilized to identify pests, damage thresholds are considered, all possible management options are



THE FLORIDA GREEN

evaluated and selected control(s) are implemented. IPM involves a series of steps in the decision-making process:

a. Through regular monitoring and record keeping, identify the pest problem, analyze the conditions causing it, and determine the damage threshold level below which the pest can be tolerated.

b. Devise ways to change conditions to prevent or discourage recurrence of the problem. Examples include: utilizing improved (e.g, drought resistant, pest resistant turfgrass varieties, modifying microclimate conditions, or changing cultural practice management programs.

c. If damage thresholds are met, select the combination of control strategies to suppress the pest populations with minimal environmental impact, to avoid surpassing threshold limits. Control measures include biological, cultural, physical, mechanical, and chemical methods. Biological control methods must be environmentally sound and should be properly screened and tested before implementation. Non-chemical control measures should focus on practices such as the introduction of natural pest enemies (e.g., parasites and predators), utilizing syringing techniques, improving air movement, soil aerification techniques, and mechanical traps. The selection of chemical control strategies should be utilized only when other strategies are inadequate

When chemical and nutrient products need to be applied the following practices should be utilized:

2. Always read and follow label directions when using any plant protectant products. Strive to treat problems at the proper time and under the proper conditions to maximize effectiveness with minimal environmental impact. Spot treatments may provide early, effective control of problems before damage thresholds are reached.

3. Store and handle all pest control and nutrient products in a manner that minimizes worker exposure and/or the potential for point or non-point source pollution. Employ proper chemical storage practices and use suitable personal protective equipment and handling techniques.

4. Use nutrient products and practices that reduce the potential for contamination of ground and surface water. Strategies include use of slow-release fertilizers, selected organic products, and/ or fertigation.

5. Test and monitor soil conditions regularly and modify practices accordingly. Choose nutrient products and time applications to meet, not exceed, the needs of the turfgrass.

6. All plant protectant products should only be applied by or under the supervision of a trained, licensed applicator or as dictated by law.

7. Maintain excellence in the continuing education of applicators (including state licensing, professional association training and IPM certification). Training for non-English speaking ap-





plicators should be provided in the worker's native language.

8. Facilities should inform golfers and guests about golf course chemical applications. Common methods include permanent signs on the first and tenth tee boxes and/or notices posted in golf shops and locker rooms.

Water Usage

1. Use native, naturalized or specialized drought-tolerant plant materials wherever possible For areas in play (greens, tees and fairways), using plant materials that are: well-adapted to local environmental conditions; can be efficiently managed; and provide the desired playing characteristics.

2. Plan irrigation patterns and/or program irrigation control systems to meet the needs of the plant materials in order to minimize overwatering. When feasible, use modern irrigation technologies that provide highly efficient water usage. Inspect systems regularly for leaks and monitor water usage.

3. Water at appropriate times to minimize evaporation and reduce the potential for disease.

4. Consider converting to effluent irrigation systems when available, economically feasible and agronomically and environmentally acceptable

5. Manage water use effectively to prevent unnecessary depletion of local water resources.

Waste Management

1. Leave grass clippings and other organic materials in place whenever agronomically possible. If clippings are removed, compost and, if possible, recycle them.

2. Dispose of chemical rinsate in a manner that will not increase the potential for point or non-point source pollution. Methods include rinsate recycling or "spraying out" diluted compound in previously untreated areas.

3. Dispose of chemical packaging according to label directions (e g, triple rinsing, recycling or returning to manufacturer).

4. Other waste products, such as used motor oil, electric batteries and unused

solvents, should be recycled or disposed of according to the law and available community disposal techniques.

5. Seek to reduce waste by purchasing products that minimize unnecessary packaging.

Wildlife Management

1. Habitat for wildlife species that help control pests (e.g., bats, bluebirds, purple martins, etc.) should be protected. Additional habitat for these beneficial species should be created whenever feasible and environmentally desirable.

2. Manage habitat to maintain healthy populations of wildlife and aquatic species.

3. Species such as skunks, non-migratory Canada geese, and deer, when they become damaging should be managed through non-harmful means whenever possible. Non-harmful control methods could include dogs, noisemakers, repellents, and trapping and removal. Managed hunting may be appropriate where legal and safe.

Facility Operations

1. Facilities should conduct an environmental assessment in order to develop and implement an overall environmental policy and/or long-range plan that reflects or expands upon these principles.

2. Maintain ongoing records to measure and document progress towards environmental improvement.

 The environmentally responsible practices adopted for the maintenance of the golf course should extend to all areas of the overall facility grounds.

4. Facilities should adopt practices and technologies that conserve natural resources, including water and energy.

5. Facilities should develop and initiate comprehensive programs for recycling reuse and waste reduction.

6. Facilities should properly store and dispose of solvents, cleaning materials, paints and other potentially hazardous substances.

7. Facilities are urged to join programs that help to foster effective environmental management and policies.

8. Facilities should take active steps to

educate golfers, neighbors and the general public about their environmental policies and practices

What Golfers Can Do To Help

The American golf community is dedicated to preserving the game's treasured links to nature. As a result, golf courses are now being developed, designed and managed more responsibly than ever before.

However, we who play the game also have a responsibility to help ensure that golf remains compatible with nature and that our courses are wellmanaged and in harmony with the environment.

As golfers we should:

1. Recognize that golf courses are managed land areas that should complement the natural environment.

2. Respect designated environmentally sensitive areas within the course.

3. Accept the natural limitations and variations of turfgrass plants growing under conditions that protect environmental resources (e.g., brown patches, thinning, loss of color).

4. Support golf course management decisions that protect or enhance the environment and encourage the development of environmental conservation plans.

5. Support maintenance practices that protect wildlife and natural habitat.

6. Encourage maintenance practices that promote the long-range health of the turf and support environmental objectives. Such practices include aerification, reduced fertilization, limited play on sensitive turf areas, reduced watering, etc.

7. Commit to long-range conservation efforts (e.g., efficient water use, Integrated Plant Management etc.) on the golf course and at home.

8. Educate others about the benefits of environmentally responsible golf course management.

9. Support research and education programs that expand our understanding of the relationship between golf and the environment.

10. Take pride in our environmentally responsible courses.

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INDUSTRY NEWS

By All Accounts - Except the Count That Counts... **FTGA Conference Scores high Marks**

'But where WAS everybody and exactly why didn't they come?'

he numbers aren't all in yet for the FTGA Conference and Show, but it was obvious that attendance was less than expected, which is a shame, because everybody who came was pleased with the University of Florida location.

The campus was beautiful. Parking and access was free and easy while the students were on semester break. Hotels were 50 to 80 percent less expensive than Tampa. The classrooms and Touchdown Terrace were excellent. The tours covered turf plots and athletic fields.

The question association leaders and committee chairman are asking is, "Where was everybody and exactly why didn't they come?"

I didn't hear a single person attending the education and trade show voice a hardcore negative about the Gainesville site. The only obviously unhappy people were the vendors who pay for this show with their exhibitor fees. They want and need to get a better bang for their buck or they simply will stop supporting the show.

It is obvious everyone needs to do some candid soul-searching and identify why people aren't supporting this event in the numbers necessary to make it possible for the FTGA to function.

By all the accounts, the educational sessions got good reviews and were well attended. The show will be held in Gainesville again next year, Aug. 14-18.

Members need to speak up with constructive input to help leaders identify what needs to be done, whether it's the location, timing, content, or competition from other events.

Meanwhile, the event did fulfill its obligations by conducting the business of the association as a new slate of officers took the helm for the new year. Mark Jarrell, CGCS is the new president. Erica



From left: Secretary/ Treasurer Alan Puckett, Vice President Erica Santella, President Mark Jarrell, CGCS and Past President Scott Wahlin, CGCS were elected at the FTGA Annual Meeting in Gainesville. All Conference photos by Joel Jackson.



GCSAA Secretary/Treasurer Tommy Witt, CGCS presented a GCSAA/Etonic seminar on "Communicating with Your Employer."

Lisa Micunek, president of her company, Accent on Success gave a GCSAA/Etonic seminar on "Enhancing the Image of the Golf Course Superintendent.



Brad Kocher, CGCS, Director of Golf Course Maintenance for the Pinehurst Resort kicked off the Golf Concurrent Session explained the scope and detail of the preparations necessary for holding the 1999 U.S. Open.



From left, Mike Brown, Coastal Turf Company; Alan Puckett, Lake Region Y&CC; and Frank Cone, Legends Golf Course led a panel discussion of maintenance practices for the ultradwarf bermudagrass varieties.