

difference is that instead of providing rarely used farm information, Golf Link provides information that relates directly to the golf course business.

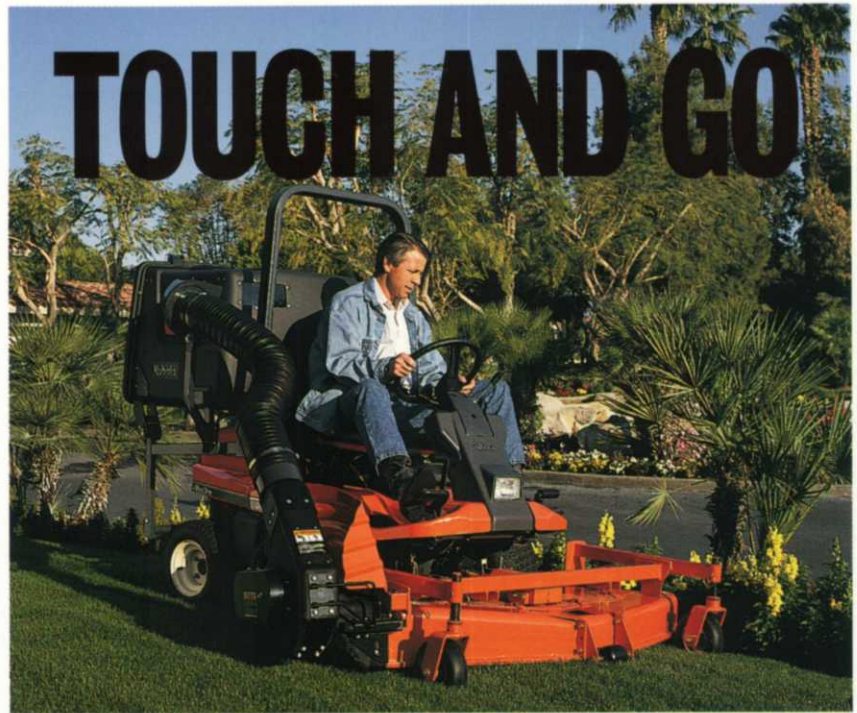
Golf Link provides access to the systems of the GCSAA, USGA, PGA, NGF, EPA, architects, builders and others. Also, recently the FGCSA Board of Directors gave permission to Golf Link to put published articles out of the *Florida Green* into the system.

As you can see, the benefits of the Golf Link system are numerous. However, I have found two main uses that my staff and I employ the system for, both of which have substantial financial rewards to my club. These benefits are both related to the weather functions the machine provides, including instant Doppler weather radar and various projected forecast maps that are updated continuously, 24 hours a day, seven days a week.

The hardware and monitor are located in the office of the office manager, who can be in radio contact with my staff and me at any time during the day. If adverse weather is approaching, the information is communicated by hand-held radio to the management staff, who can then make a judgment call on when to order the crew members off the golf course. Once the crew is in the maintenance facility, the Doppler weather radar is analyzed by the staff to help make a decision on whether to keep the crew at work or allow them to leave for the day. This helps us to save on labor cost that might have otherwise been wasted.

The other financial reward that we obtain by using the weather functions of the system is in planning applications of fertilizer or other compounds. We all know that one application of a product that is washed away by rainfall can be a costly mistake. By using the system in correlation to the application of compounds that could be potentially harmful it also signifies a commitment to being a conscious environmental steward.

The weather maps and radar are also used daily when determining whether or not to irrigate the golf course. We are fortunate enough to have a weather station that will cumulate all the factors that go into evapotranspiration and down-



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load this information to the computer to adjust the daily watering times. However, before we allow the computer to do this, we check the current radar and the forecast map to insure that rain is not imminent. Even though the irrigation system is hooked into a rain sensor, if the computer has already begun to run the nightly irrigation schedule the water that was applied might have been unnecessary.

I think the moral of the story, or the lesson I have learned, is that things are not always black and white. If you look hard enough into something you will find many functions or uses that are not always evident at first glance. We have a tough job that isn't getting any easier and every tool that we can utilize to help us accomplish our duties is of benefit to us.

Professionalism, Part II — Is Your Image a True Reflection?

Do you consider your professional work responsibilities comparable to that of an airline pilot or a judge? If you answered "yes" then I like your attitude. If you said "no" then we've got something to discuss. Do think they are superior to you?

Just why do we look up to the profession of an airline pilot? When we see the pilot and flight crew walking to our gate, don't you expect to see a certain "image" in the pilot? A crisp neat uniform, confident attitude, walking tall, in command. How would you feel if instead you saw an unshaven, staggering, bleary eyed individual with alcohol on his breath. Would you be inclined to board the plane? Probably not! No matter what you do for a living shouldn't you have the expectation of positive traits and behavior that define a professional's career?

An airline pilot's or judge's image can be easily identified with life and death responsibility in their work. Have you thought about the golf course superintendent's responsibility for proper administration of pesticides. We have to guard against improper exposure to our employees, golfers and the environment

in general. How can our image presumed to be any less important? How can we afford to be any less professional?

On my return flight from the GCSAA Conference, we hit a patch of turbulence over the Rocky Mountains that sent the plane dropping, dipping and veering off course. The plane was stone quiet as we sat frightened to death as the "professional" in the cockpit fought to control the plane. In a few minutes the plane was stabilized and the pilot came on the intercom and apologized for the inconvenience. He explained that the unstable air we hit is caused by the mix of warm and cool air blowing over the mountains. It doesn't show up on radar. You can't see it coming. You just have to deal with it when it happens.

I didn't see a single passenger go up to the cockpit and chew him out or disagree with his answer. Why? Because we're not qualified to dispute his answer. It seems that we, as golf course superintendents, are always second guessed. Our explanations and answers are often disputed and challenged. Golfers seem to think because they mow grass they are qualified to pass judgment. They don't have much empathy for that "unseen turbulence" we experience like low oxygen levels in lakes that might cause a fish kill. They immediately point a finger at the "pilot" superintendent and think something incompetent has happened.

If we can form a visual image of that commanding pilot or a wise judge, what is the image of a golf course superintendent? More and more everyday we are being called upon to be leaders and stewards of a very valuable resource, the green space and wildlife sanctuary in the ever sprawling urban environment. The mantle of environmental responsibility is being placed on our shoulders.

Our professional image will be formed by our ability to provide thorough and accurate information that educates the public and dispels the negativism to golf that has been so widely publicized. Our image will also be reflected in the behavior and appearance of our staff from the rookie greensman to the Superintendent. It will be manifested in the cleanliness of our shops and equipment.

Professionalism has to come from the top. If you lead by example, that professionalism will trickle down to the most inexperienced person on your staff. Professionalism to the utmost is what every golfer expects of you whether you like it or not. What do they see? Is your image a true reflection of a professional?

*Mike Bailey, GCS
Boca Rio C.C.*

Professionalism, Part II — The Assistant's Role in Golf Course Operations

In recent times, the image and responsibilities of the golf course superintendent have greatly changed. In the early years, they were thought of as greenskeepers with little or no formal education. Today, many golf course superintendents hold a specialized degree in turfgrass management and are recognized as golf course managers. As challenges and opportunities for the modern golf course superintendent have changed, so has the role of the assistant.

Today, many golf course superintendents are busy with committee meetings, budget tracking and preparation, as well as dealing with numerous government regulations. For these reasons, a superintendent places greater responsibility on the assistant superintendent.

It is the assistant who carries on the day-to-day tasks of the golf course. He or she works directly with the golf course crew in scheduling, training and ensuring assignments are completed properly, efficiently and safely. Self-confidence in his or her abilities to supervise the golf course staff and deal independently with a variety of issues, without daily guidance from the superintendent, is necessary.

An assistant superintendent must display strong work ethics through hard work, honesty and dependability because he or she is a positive role model for the crew. The assistant must also project a professional image to other club employees as well as to the club's membership.

A good assistant will employ the ideas and philosophy of the superintendent. The assistant may not understand why some things are done the way they are, but he or she must trust and support the superintendent's judgment. You learn to use tact when inquiring about certain decisions the superintendent makes, not to question, but to learn.

A variety of skills are essential to be an effective assistant superintendent. One is good communication skills, not only with the crew, but also with the superintendent, vendors, other professionals and club members. It allows the assistant to effectively inform the superintendent on the status of the golf course, its employees and events that may directly or indirectly affect the golf course operations.

Problem solving is another necessary skill. Making the right decisions in the superintendent's absence, based on experience with the superintendent, the assistant will solve many small and less difficult problems. These problems can range from turf and pest practices to personnel issues. He or she will also be aware of the guidelines and limitations regarding certain types of decision that require the superintendent's input and final decision.

Computer literacy is yet another needed skill. The assistant is usually the one that operates, or assists, in the operation of a sophisticated computerized irrigation system. A data base management system may also be used to track pesticide and fertilizer applications.

Having a degree in turfgrass management, or equivalent knowledge, is a definite advantage for an assistant superin-

tendent; education plus experience is an even greater advantage. This combination provides knowledge not only for field diagnosis of problems and turf and pest management, but also in how to build resources and network with various agencies and peers. Resources, and an active network of peers having various degrees of practical experience, supply a vast pool of knowledge to draw from or simply exchange ideas.

In order for the assistant to be successful, it will take more than hard work, honesty and dependability. He or she must work for someone who has the same values and wants to see the assistant succeed. The superintendent must give the assistant guidelines to

work within. In most cases the guidelines are in the form of a job description. The superintendent and assistant should talk often to ensure they both share the same priorities (i.e., if the assistant has the responsibility of doing crew schedules). As more responsibility is delegated to the assistant, a good superintendent will support decisions the assistant makes because the superintendent will realize there is more than one way to get things accomplished. If the assistant makes a mistake, a good superintendent will inform the assistant, not in a condescending manner, but as a teaching experience. By so doing, the assistant will not be reluctant to make more decisions.

The assistant's role today is nearly as demanding and diverse as the superintendent's role. It can also be just as rewarding. Attitude, dedication, hard work and a superintendent who motivates and teaches his or her assistant su-

perintendent is what will make tomorrow's knowledgeable and confident superintendent.

Matt Taylor

Assistant Golf Course Manager
Collier's Reserve

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Water Quality Management

BY JOHN FOY, DIRECTOR

USGA GREEN SECTION

On our planet, water makes up over two-thirds of the entire surface area. It is also a basic requirement for survival of all life forms. Water bodies and wetlands are found on virtually every golf course in Florida.



John Foy

Protecting surface and ground-water quality should be a goal and an integral part of course management. To insure that your golf course is maintaining good water quality, it is important to have a strategy in place to monitor water quality, improve conditions if warranted and deal with any problems that may arise.

Water quality management will be the focus of this sixth and final article in this ACSP series. To achieve certification in this category, you

need to consider the following things:

(1) **Baseline Data and Water Quality Monitoring:** What baseline information has been established for water quality, including clarity, dissolved oxygen, and pH? What water sources are tested? Who conducts the tests and how often are they carried out?

(2) **Streams:** If a stream or creek is on the property, what stream protection measures are in place to reduce erosion, maintain adequate shading, and reduce pollution inputs? Has anyone sampled for "macroinvertebrates" (insect larva and

To insure that your golf course is maintaining good water quality, it is important to have a strategy in place to monitor water quality, improve conditions if warranted and deal with any problems that may arise.

ACSP: Part VI

In this final Part 6 of this series on the Audubon Cooperative Sanctuary Program for Golf Courses, methods of *Water Quality Management* are presented.

- ✓ Environmental Planning
- ✓ Member/Public Involvement
- ✓ Wildlife & Habitat Management
- ✓ Water Conservation
- ✓ Integrated Pest Management
- ✓ **Water Quality Management**

other organisms that lack a backbone)? Since many of these organisms are sensitive to pollution, they are a highly reliable indicator of pollution.

(3) **Wetlands:** If wetlands are present, what condition are they in (degraded? viable & productive? invaded by phragmites or purple loosestrife? protected?) What measures are taken to protect or improve wetland habitat?

(4) **Buffers and "No Spray" Zones:** Vegetative buffers around water features help to filter runoff and reduce erosion. Have you established buffers and "no spray" zones near water sources to minimize potential drift and runoff?

(5) **Drainage:** What areas drain to lakes, ponds or wetlands? What filtering mechanisms are present? If fertilizers are getting into lakes, that can be a major cause of algae problems.

(6) **Chemical Additives:** What (if any) chemicals have been added to water features? Have you made any changes in chemical management of water features? Have you tried alternatives such as biological remediation or aquatic planting? Is wildlife abundant or scarce?

(7) **Maintenance Buildings:** The maintenance area can be a potential source of contaminated runoff. Are all buildings safe and up to code? Are there repairs that need to be made? If someone came to inspect your facility, would they come away confident or wary about your management practices?

As an additional note on water quality management, research conducted by the USGA on the environmental impacts of golf courses revealed that when fertilizers and pesticides are used properly, the potential for leaching of these materials into ground water is minimal. However, this research revealed that minimizing runoff into surface water is an area that needs greater attention.

The creation of buffer strips and no spray zones should be pursued at all facilities. Although a vegetation buffer surround-

Water quality affects virtually every golf course

ing all sides of a water body would provide the best nutrient filter, this is usually not an acceptable situation when an area comes into play. Maintaining a higher height of cut turf buffer strip or grassed swale for those areas in play is a reasonable compromise that can also help minimize maintenance requirements. For the out-of-play areas of lakes or ponds, border shrubs and emergent plants should be established and maintained.

Ideally, "no-spray" zones approximately 50-foot wide should be enforced

around all surface water bodies. However, adhering to this ideal is not always feasible on a golf course. When fertilizer applications must be made immediately adjacent to a water body, the use of drop spreaders is recommended.

Also, only slow release nitrogen sources and no more than 0.5 lbs. of actual nitrogen per 1,000 square feet should be applied at a time in sensitive areas. If an unacceptable level of pest activity develops in a "no spray" zone, naturally the first route to pursue would

be the use of biological control agents. If a pesticide must be used in these areas, it should only be applied as a spot treatment.

Also, the chemical characteristics of the pesticide options should be carefully considered in selection of the material to use in these locations.

The Jan/Feb, 1995 issue of the *Green Section Record* contains a listing of commonly used pesticides and their characteristics.

Water management by design

BY STEVE EHRBAR, CGCS

OLD MARSH GOLF CLUB

Old Marsh Golf Club was built on a unique 460 acres of land. Architect Pete Dye routed many of the holes around protected wetlands and his design for the irrigation and drainage systems were very well thought out.

The irrigation system was installed with many different sized heads and half circles to ensure no irrigation water would be thrown into the wetlands or created marshes.

The drainage system on the course has approximately 30 catch basins per hole. All the excessive runoff water from rain or irrigation is collected by these basins and run through a series of pipes to containment lakes. From these containment lakes, the water is pumped to the main irrigation lake for reuse.

One design feature that each hole has is that all the perimeters of the fairways and roughs are built higher than the middle of the fairways to ensure no fertilizer or pesticides contaminate the wetlands. We are very selective on our use of products, and try to be environmentally conscious.



Pete Dye manages water at Old Marsh with unique design features.
Photo courtesy USGA Green Section.

Grassing for Water Quality



Canal at the Hole in the Wall Club before restoration project.

BY FRED YARRINGTON

Note: Fred Yarrington is an ACSP Resource Committee Member for the Hole In The Wall Golf Club, Naples

At Hole in the Wall Golf Club, we have approximately 10 acres of land in 4 or 5 areas which are out of play. Most of these areas are adjacent to native vegetation areas or bodies of water.

Our long-range goal is to environmentally restore all of these areas, which are currently mowed on a regular basis, and eventually have a low maintenance area of natural vegetation.

The project started in 1987, when we decided something had to be done about the algae in the canals (*see photo above*). We were told we needed to deepen the canal in order to control the

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GRASSING FOR WATER QUALITY

First Phase: *Deepening the canal*



algae problem (See photo, above). In December, 1994, we selected a one-acre area, approximately 1,000 feet long, adjacent to a drainage canal. This "trial" area was planted with cord grass on 3-foot centers, and we also added aquatic plantings in the canal.

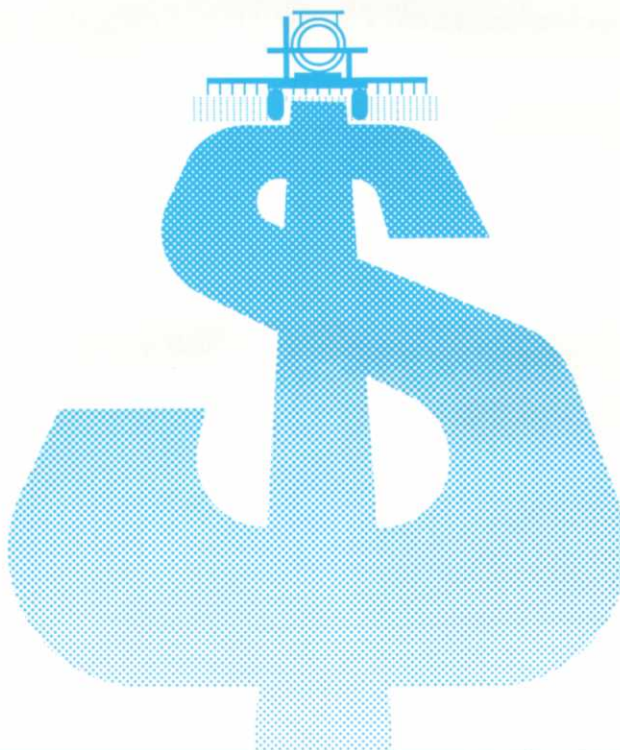
The plantings are six months old and are slowly growing in. We would have preferred a more dense planting, but selected the 3-foot centers for cost reasons. The trade off is that more weeding is required in the interim until the grass grows dense enough to inhibit weed growth.

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May, 1995:
*After the cordgrass
and aquatic
plantings.*



We no longer have a problem keeping the canal clean in this planted area. During construction to deepen the canals, we inserted a weir near the 17th green which enables us to control water levels and flow through the canal. Therefore, we are able to keep the water level in the canal much higher than we were before this project.

Our membership has been very supportive of this project. We got the idea and source of the cord grass from Collier's Reserve Country Club. I believe a key to success in the Audubon Cooperative Sanctuary Program is the sharing of ideas and information.



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One of three removable sumps on the wash pad

Water quality management for the equipment wash area

BY DARREN DAVIS
GOLF COURSE SUPERINTENDENT
OLDE FLORIDA GOLF CLUB

The equipment wash area has become a hot topic in recent years. Most superintendents' management styles are slightly different, but I believe we all want the same outcome, an environmentally conscious equipment wash area that functions up to our standards.

A couple of years ago, it seemed everyone was jumping on the band wagon and buying water recycling units. The recycling units were supposed to filter all contaminants from the water and recycle the water for reuse. The feeling was that the units were going to be the wave of the future, and someday they might be.

However, it seems that people are currently shying away from these units because of the horror stories that are being told by some of the original purchasers, not to mention the cost. I was told by one equipment technician that he spends one-third of this time working on their recycling unit. I also know of a golf course that bought a unit three years ago, and it has still never worked to this day.

I contemplated the purchase of one

when I was designing our maintenance facility. I did not buy one, and with a few minor exceptions, I am very happy with the system we are using at Olde Florida. I am sure that this system would not work for everyone, but it is an option.

Goals

My goals of the equipment wash area are simple:

To be located in a convenient area that coincides with the desired flow of traffic.

The area to be large enough so that at least three pieces of equipment can be cleaned at once.

The quality of water used to clean equipment be free of any damaging compounds that might cause premature corrosion or deterioration of the equipment.

The availability of compressed air for use on electrical components or other needed parts of the equipment.

Complete capture of any clippings/solids.

Complete capture of any petroleum products (by using an oil/water

separator or a similar baffle system).

A pleasant area to clean the equipment, with little or no unpleasant odor.

The Pad

The concrete pad at Olde Florida measures 20-feet by 40-feet. The sides and back also have a 5-inch poured concrete curb to prevent water and/or debris from leaving the area. Along with the wash pad, a concrete ramp should be poured leading on to the wash area so that water and debris are not channeled on to the pad from the surrounding area.

The concrete pad is sealed with a silicone, acrylic concrete stain. It is very important to use this or a similar concrete stain, and follow the directions completely. If you do not, you will most likely be dissatisfied with the longevity of the coating.

Before applying the stain, the concrete should be at least 45 days old, clean, dry and free of paint and grease.

For best results, the concrete should be etched with one part muriatic acid and two parts water. The solution can be mixed in a plastic sprinkler can. The area