duty work. We do rent a dump truck for any super heavy duty projects.

One of the GX800's is used full time by our landscape person for all his work. The other (older) one is used for transportation, dragging-in topdressing and miscellaneous light duty jobs.

The two Club Car Carry-Alls are used by the superintendent and cup cutter in the morning or by the person fertilizing greens, tees or other various hand work or irrigation jobs.

We get the use of these vehicles in an agreement with Club Car for buying our golf car fleet. After one year we turn in one vehicle and get a replacement. All of our vehicles have lights because our regular dew-sweeping golfers tee off at the crack of dawn and we have to get out ahead of them, which means working in the dark almost every day.

The Carry-All I is an electric vehicle and is used in the clubhouse area for trash hauling and for hauling range balls from the range picker back to the clubhouse. We chose the quiet of electric power so we won't disturb our guests, because this vehicle will be working around the 1st and 10th tees, the range and clubhouse constantly.



We recently purchased a Smithco Spray Star 160 for all spraying needs. We change the nozzle sizes as needed to fit the various applications from greens to fairways.

> JOE ONDO, CGCS Winter Pines GC

Managing a large fleet Leasing Can Make Sense for Vehicles that See Heavy Use

For our project work we have two Toro Workman 3200s.

Specifications: Made of steel. Gas powered. Load capacity of 4,000 lbs.

Added options:

• Roll bar lights for special-eventpreparation work done at night.

• Dump body for ease of hauling and placing materials.

• Toro topdresser attachment for topdressing greens, tees and approaches after aerifying. Selected mounted topdresser versus pull-behind for easier turning and traction.

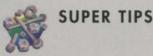
•Hydraulics used only for the topdresser.

Uses: Transportation for course setup. Hauling topdressing, project debris and clippings. Pull hand mowers, greens rollers and drag mats.

Lease strategy: These vehicles are leased because they are constantly used in heavy-duty situations due to their payload capacity. Therefore the wear and tear on them after a couple of years would require a great deal of repairs that would not be cost effective if the vehicle were purchased.

For general transportation and light-





Observations from the Open

There are some who might have the perception that little can be gained by serving as a volunteer crew member at a major golf tournament. After all, isn't it true that these host clubs begin preparations years in advance, they increase the operating budget, and have a commitment from the membership that allows them to do whatever is necessary to shine for that one week in the spotlight? Well, yes, while all of that is true,



A 4x4 piece of lightweight plywood protects the putting surface during preparations of the U.S. open at Congressional CC. Photo by Darren Davis.

serving as a volunteer at a major tournament can still be a very rewarding, educational experience.

A couple of small super tips that I learned while working at the U.S. Open at Congressional a few years back have helped my staff shine when we host our annual Member/Guest or Club Championship. Both of the following tips deal with preparing the putting surface for play.

The first tip is the use of a piece of plywood by the individual who sets the pins. The lightweight piece of plywood that was used at Congressional measured approximately four feet by four feet and had a round opening removed to insert the cup cutter where the new hole location was to be placed in the green's surface.

The biggest value of the board is to help prevent any dents, scuffs or other irregularities from being accidentally made on the green's surface. Without this board, as the operator works on the cup, the weight of their body could potentially result in indentations or scuffs and tears on the surface.

The board also allows the employee to place items such as a sand bucket, painting supplies, or the hole liner on the board while they work, without fear of the items causing indentations, or leaving debris on the green's surface.

The second useful tip that I picked up from the

"Open" and have initiated for our special events, is the use of fine sieved green sand to help mask and smooth poorly repaired ball marks on the greens. By dotting a small amount of green sand in the small voids on the putting surface, there is an aesthetic improvement as well as a smoothing effect, so a golfer's putt is less likely to stray off line.

No, these little tips will probably not make your bermudagrass golf course comparable to a northern golf course with striped bentgrass fairways and four-inch bluegrass roughs with huge stands of large leaf deciduous trees. Nor will they make your greens roll like a finely manicured, tightly mowed bentgrass green; but I am a big believer that the little details such as these go a long way to the enjoyment of a round of golf.

> DARREN DAVIS Olde Florida Golf Club



Adding fine, sieved green sand to ball marks can clean up the appearance of our greens for a major club event. Photo by Darren Davis.

duty work we have 11 Club Car Carryall II XRT vehicles.

Specifications: Gas powered. Aluminum box bed with a load capacity of 900 lbs.

Added options:

• Roof and windshield on two units for assistant superintendent transportation. We often have to inspect the course during wet weather, freezing cold weather and at night.

• Manual dump body for dumping clippings, debris, sand, soil, etc.

Uses: Cup cutting and course set up. Pulling hand mowers and rollers. Hauling punster. Dragging clippings debris.

Innovative Modifications: A drag net was attached to the bed to scatter clippings around bunkers, greens, and tee complexes where a tractor blower may not be practical or have access. It also works well to drag fairways with excessive and hard-to-scatter clippings debris.

Leasing options: These vehicles are also leased due to the the daily use and wear and tear 365 days a year. Keeping them repaired after two or three years of use would not be cost effective.

Our spray rig is a John Deere Pro Gator.

Specifications: Steel body and frame construction. Diesel powered.

Options: Lights on the roll bar for night spraying.

Uses: The Pro Gator is used only for spraying. It is mounted with a Chem Pro 160 sprayer that is equipped with its own Kohler engine. It has a 160-gallon capacity.

The separate engine is a definite plus, allowing the sprayer to maintain full power and pressure. We selected a diesel engine so the Pro Gator would be able to maintain constant speed up and down our mounded areas better than a gas engine.

Leasing options: This vehicle was purchased because it is not used on a daily basis which limits the wear and tear on the vehicle.

> TREVOR BRINKMEYER Assistant Superintendent Olde Florida GC

THE FUNDAMENTALS OF THE GAME VERSATILITY. POWER. COMFORT.

K II

R



Specialty turf work can be made simple with the new design of the Kubota M Series Turf Special tractors. Special tires provide low ground pressure to protect the turf. Kubtoa's rugged and environmentally friendly E-TVCS emission certified engines deliver more power than before. And new cab models provide all day comfort.

> Versatility. Power. Comfort. If this is everything you value in a tractor, climb aboard.

SEE THE KUBOTA DEALER NEAREST YOU!

BOYNTON BEACH Florida Coast Equipment 9775 W. Boynton Beach Blvd. 800-343-7594

BRADENTON Franz Tractor Company 5504 15th Street (941) 755-5722

DELAND Triple D Equipment 2820 South Firehouse Road (904) 734-2119 tripledeq@worldnet.att.net

JACKSONVILLE Costal Equipment Systems, Inc. 5287 New Kings Road 800-275-3860



NAPLES Florida Coast Equipment 694 Commercial Blvd. (941) 435-1667

ORLANDO Trail Saw & Mower 4540 N. Orange Blossom Trail (407) 293-1861

> PENSACOLA Coastal Machinery 6701 Mobil Hwy. (850) 944-2002

Kubota Tractor Corporation markets a full line of tractors and construction equipment through a nationwide network of over 1000 authorized dealers USGA FLORIDA REGION UPDATE

Wetting Agents **Effective in Battling Drought Stress**

ater on many Florida golf courses is becoming scarce, and superintendents are forced to prioritize the water being applied.

Localized dry spots are worsening with the drought and are becoming more apparent on many of our Turf Advisory Service visits.

These brown spots range in size from one to two feet on greens, and up to 10 or more feet on tees, fairways, and roughs. Decreasing the amount of water at each irrigation cycle exacerbates the problem and reestablishing adequate soil moisture becomes difficult.

Wetting agents are effective tools during these dry times and preventive applications are much better than curative. Fertigation units can efficiently apply preventive treatments. However, granular wetting agents also are successful.

It is very important to keep an eye on the winter overseeding during this dry period. The overseeding has been transitioning over the past few weeks, but some courses (central to north Florida) still contain 50 percent to 60 percent overseeding.

Several courses experienced rapid transitioning as the ryegrass/bluegrass became too dry during a recent warm spell. The overseeding burned out before the bermudagrass was actively growing, and this created thin spots on several putting greens. Ample water and fertility should continue on putting surfaces to allow for a smoother transition and to encourage sustained bermudagrass growth.

Although forecasts are not optimistic, we're all hoping and praying for a normal rainy season this summer.

> TODD LOWE Agronomist, Florida Region **USGA** Green Section tlowe@usga.org or 941-828-2625 Credit: USGA Links On Line

2001 Florida Plants of the Year - Part 3

Editors Note: The Florida Plants of the Year program was launched in 1998 and has been beneficial to both consumers and growers. Purchasers are introduced to under-utilized but proven Florida plant material. This program is sponsored by the Woody Division of the Florida Nurserymen and Growers Association (FNGA). This group of plants deserves consideration for their drought and stress tolerances and wildlife attraction.

COMMON NAME: Indigo Spires

BOTANICAL NAME: Salvia 'Indigo Spires' HARDINESS: Zones 7-10

MATURE HEIGHT AND SPREAD: 3'- 4' x 3'- 4'

CLASSIFICATION: Herbaceous perennial

LANDSCAPE USE: Long lasting color in perennial border or accent plant



CHARACTERISTICS: This herbaceous perennial does well in sun or light shade. It is a butterfly and hummingbird plant that blooms for a long period of time. The vigorous plant has

cuttable flower spikes of deep blue with gray-green foliage and responds well to pruning.

COMMON NAME: Miniature West Indian or Singapore Holly

BOTANICAL NAME: Malpighia coccigera HARDINESS: Zones 10-11 MATURE HEIGHT X SPREAD: 2.5' x 3'

CLASSIFICATION: Evergreen shrub

LANDSCAPE USE: Low hedge or groundcover

CHARACTERISTICS: The spreading branches with shiny

dark, holly-like leaves are a backdrop for 1" white flowers in spring followed by orange edible berries. Sun or part shade are best, and the plants have a tolerate high pH and some salt exposure.

COMMON NAME: Varigated Dwarf or Asiatic Jasmine

BOTANICAL NAME: Trachelospermum asiaticum 'Tricolor' HARDINESS: Zones 7-10

MATURE HEIGHT X SPREAD: 6'-12' tall and 5'-6' wide **CLASSIFICATION:** Groundcover

LANDSCAPE USE: Groundcover for sun or shade

CHARACTERISTICS: This is a rapidly spreading evergreen

viney ground cover. It has varigated white, green and red foliage and rarely blooms. Good for partial shade or full sun, this plant grows in places where other can not. As in all Dwarf Jasmines-the first year it sleeps, second year it creeps and the third year it leaps.

COMMON NAME: 'Summer Wave' Torenia

BOTANICAL NAME: Torenia fournieri 'Summer Wave'

HARDINESS: Zones 8-11, sensitive to frost MATURE HEIGHT X SPREAD: 12" x 12"

CLASSIFICATION: Perennial

LANDSCAPE USE: Bedding plant for partial shade, containers and hanging baskets

CHARACTERISTICS: This perennial spreads quickly and can tolerate sun and partial shade. Deep blue color is hard to find in heat tolerant plants. will be available in other colors soon-deep purple and pink.





YOUR KEYS TO HIGH-PERFORMANCE, LOW-MAINTENANCE GREENS.

Topdress with PROFILE™

Gearing up the long-term health of your greens is as easy as making PROFILE[™] Porous Ceramics part of your regular topdressing mix. University research and over 3,000 golf courses have proved that PROFILE helps reduce scheduled maintenance by:

- Improving drainage and oxygen in the root zone
- Preventing and minimizing compaction
- Solving localized dry spot
- Increasing moisture and nutrient retention

Build with PROFILE™

PROFILE[™] in your original greens mix will prevent many of the problems that drive up maintenance costs later. PROFILE outperforms other soil amendments by permanently altering soil structure with a complete agronomic package:

- Exceeds USGA® stability requirements
- Meets USGA® particle size distribution
- Provides a CEC of 33 meq/100g
- Maintains water-holding capacity, infiltration rates and oxygen levels that exceed industry standards



Race to your PROFILE distributor or call 1-800-207-6457 for all the details.

www.profileproducts.com



USGA LINKS ONLINE UPDATE

Drought Strategy Can Mitigate Damage

Editor's Note: The following information is excerpted from a USGA Links On Line Update. I edited out references to snowfall and mountains, which weren't pertinent. I found the remaining information useful and I hope you do to. The parentheses are mine.

Drought conditions are again pre dicted for much of (our area). Below-average precipitation this spring has (us under) water restrictions. Developing a plan early could help mitigate widespread damage across the golf course if water will be a limiting factor.

1. Develop a traffic control program if one is not already in place. Droughtstressed turf will not tolerate traffic very well.

2. Evaluate your irrigation system. Inefficient operation wastes water.

3. Use water sparingly during spring. Deep and infrequent watering will promote strong root development, and deep roots will allow for water conservation later in the season.

4. Employ a judicious fertility program to avoid excess top growth in the early part of the season.

5. Consider plant growth regulator use if you are not using any already. PGR use can improve root development and conserve soil moisture through top growth reduction.

6. Evaluate irrigated areas and determine which portions of the course are most important to play, i.e. up the middle from tee to green.

7. Establishing more drought-tolerant species across the golf course may be an option for the long haul. (When regrassing in-play or out-of-play areas, check with the University of Florida for possible drought resistant alternatives)

These are but a few tips to keep in mind heading into this season. Trees and

other plantings also need attention during drought. Some species of trees require considerable amounts of water and may slowly go into decline during years of drought. Assess tree conditions regularly. Deep soaking periodically may be necessary to save desirable trees.

> MATT NELSON Agronomist, Northwest Region. USGA Green Section

USGA PACIFIC AND THE NORTHWEST

Seashore Paspalum Looks Very Promising

Editor's Note: You may be wondering what in the world news from the Northwest Region has to do with Florida. Read on and check out the comments on Paspalum in Hawaii. What are the two words heard most often when the following ques-

tion is asked, "What is the biggest challenge facing golf maintenance in the fu-



ture?" The answer is "water and the environment."

Covering the vast and distinctly different regions of the Pacific Northwest and Hawaii, both of these topics are of utmost importance.

At this writing, the western Washington area has experienced approximately 60 percent of normal rainfall and snow pack in the Cascades.

This may impact golf courses that are coming under increased scrutiny for water issues and our beloved salmon. Despite the negatives of a rainy day, the Green Section office in Gig Harbor has done its rain dance.

Across the ocean, Hawaii continues to deal with its own water issues. Starting this summer, the entire Ewa plains (a large area near Pearl Harbor) will begin delivering all of the golf courses treated water.

This will be interesting to watch since a golf course on the North Shore (The Links at Kuilima) has been dealing with this issue since the time of construction in the early 90s. Effluent water-use on golf courses is not earthshaking news, but The Links at Kuilima may become the poster child for environmentalists and the golf course industry.

What makes this golf course so different? Tell me the last golf course you played or visited that had gone more than four years without fertilizing some of its fairways? Show me the fairways that have not received any fertilizer and also never had a herbicide or other pesticide applied? Then let's see what kind of playing quality these fairways provide for the players.

As you may have already guessed, the grass is seashore paspalum and the effluent water provides all of the nitrogen necessary for regular growth. Superintendent Mike Honma reports that this grass is rapidly taking over the entire golf course, including the greens. The more I see of this grass, when it is managed properly, the more exciting it becomes. Is seashore paspalum the grass of the future? No, it is the grass of today!

> LARRY GILHULY Northwest Region Director USGA Green Section lgilhuly@usga.org or 253-858-2266 Credit: USGA Links On Line

If You're Looking for Improved Pest Control . . . Du Cor has an Easier Solution!

New Du Cor LEMWET can help improve your pesticide spray application! LEMWET is a lemon extract attractant and surfactant for use with most pesticides. LEMWET attracts nearby pests to your spray. In addition, it's non-ionic surfactants improve spray penetration and bring your pesticide into close contact with pests!

For over 35 years, Du Cor has been coming up with products to fit our customers needs. From liquid micronutrients, humates and fertilizers, to specially dyes, surfactants, odor counteractants and more, we take pride in finding special solutions that help our clients.

So if your looking for something special to attract a nuisance, or maybe just a different solution to help you grow, give Du Cor a call. We may already have just the solution you need!



Du Cor International Corporation

P.O. Box 593298, Orlando, Florida 32859 407-859-4390 or Toll Free 1-800-382-6735



STEWARDSHIP



As an industry, we cannot rest on our laurels. We must be vigilant in our efforts to inform golfers about the price of what they are demanding.Why do the golfers appear no more involved than they were a decade ago? Why isn't every course in the Audubon Program?

FRANK S. ROSSI, PH.D. Cornell University

hen Rachel Carson penned the now-famous *Silent Spring*, she addressed an aspect of American life wrought with ignorance regarding pesticide use and environmental quality. The outrage stirred by *Silent Spring* provoked the anger created by the "cranberry scare" of 1959.

Cranberry growers applied a pesticide during the growing season in defiance of Food and Drug Administration (FDA) restrictions. The pesticide found at low levels in the cranberry supply was suspected of causing cancer. These events had a profound and enduring effect on the public consciousness. In many parts of the country, this concern persists today.

The golf industry experienced a similar Silent Spring event with publications from the United States Government General Accounting Office in 1988 asking the question, "Are the Hazards of Lawn Care Pesticides Underestimated?"

Then in 1989 the Attorney General of New York published "Toxic Fairways; The Risk of Groundwater Contamination from Golf Courses." Jay Feldman and his organization, National Coalition Against the Misuse of Pesticides (NCAMP) and other activists seized the moment to confront the golf industry.

The initial response from the industry was defensive. The 1992 GCSAA conference held a packed session for thousands for golf course superintendents to hear from Mr. Feldman and officials from the EPA. The following year the GCSAA invited Michael Fumento, author of *Science Under Siege* who reported the results of topical searches he conducted on "golf courses" and "cancer."

"Golf courses *fight* cancer, as professional tournaments raise funds" Fumento proclaimed with the results of his search. The crowd erupted and you could sense that the golf course superintendents wanted this crisis over. Still, information was lacking regarding the fate of pesticides and nutrients applied to turf.

The United States Golf Association embarked on an important research initiative to more thoroughly understand the influence of golf turf management on environmental quality. The environment under investigation was air and water quality.

Concurrently, Ron Dodson was introducing a program to the golf industry that assisted the golf course superintendent with environmental management. Ron was also the driving force behind the Wildlife Links Research Program that investigated the influence of golf turf management on wildlife. The research information was on its way, and now there would be a mechanism for implementation.

Environmental Evolution

The USGA held a symposium at a 1998 meeting of the American Chemical Society to discuss the decade of USGA-funded environmental research. As a member of the Research Committee at the time, it was a unique experience to hear from the leading researchers in our field and then to have their work in a Symposium Book published in 2000.

The opening chapter authored by Mike Kenna and Jim Snow provides an excellent overview of the research. In the concluding section they state, "university research shows that most pesticides used on golf courses have a negligible effect on the environment." This has been the cry of golf course superintendents since the research has been completed.

Audubon International programs for new and existing golf courses has grown over the last decade, but still represents about 10 percent of all courses in the US. In fact the number of fully certified courses is well below 5 percent of all courses. Most courses are either not involved or if they have paid the entry fee (\$100), have not actively pursued full certification. Yet, in many states, the Audubon Programs are actively embraced by government agencies as a means of insuring environmental quality when a new facility is proposed.

Many golf courses throughout the country continue to face public opposition to pesticide and fertilizer use. Several communities in California have banned the use of most pesticides and this trend is actively underway in New York. The turfgrass industry has responded by mounting significant lobbying efforts to combat the legislative agenda of advocacy organizations. At the same time, the industry faces new pest problems such as bentgrass deadspot and gray leafspot that require substantial pesticide inputs to maintain expected quality.

Another Level

Millions of dollars have been invested to research the environmental fate of applied chemicals. These studies attempt to

Call Century for Solutions

Golf Course Irrigation * Pump Stations Controller Board Repairs/Replacements * Fountains/Lighting and More

At Century Rain Aid, we have been working with golf course superintendents for more than 25 years helping them solve irrigation problems. Your local Century Golf specialist can help you replace a few rotors, update your existing system or plan new construction. Century represents the industry's leading manufacturers and we offer a wide range of solutions to meet your budget and renovation schedule.

HUNTER GOLF

With Hunter rotors, valves and central control systems you can achieve reliable, water-efficient irrigation.

PUMP STATIONS

An updated pump station can solve many site problems. Your local Century Golf rep can help you design and install a costeffective pumping system.

FOUNTAINS, CLUBHOUSE LIGHTING

Water features and landscape lighting can enhance your course. Talk with your Century Golf rep for ideas on making your site more attractive year-round.

BOARDTRONICS CONTROLLER BOARD REPAIRS

Replace worn or outdated boards for Toro® and Rain Bird® controllers. Fast 48-hour repair service: 888-855-9132.

Century has the solutions . . . call today for an on-site consultation.



Pump Stations

Water Features

The SuperTR8

BoardTronics Repairs





More Than 160 Branches Coast to Coast 800-642-3706 • www.rainaid.com • email: rainaid@rainaid.com Controller Board Repairs and Replacements 888-855-9132



Audubon, GCSAA Environmental Accomplishments

Florida's Newest Audubon Cooperative Sanctuary Golf Courses The Bear's Club, Jupiter Copperleaf GC, Bonita Springs El Conquistador CC, Bradenton Hideaway Beach GC, Marco Island Raven GC - Sandestin Resort, Destin Santa Rosa G&BC, Santa Rosa Beach U. of Florida GC, Gainesville Weston Hills C.C., Weston

New Fully Certified Audubon Cooperative Sanctuaries

Chi Chi Rodriguez Golf Club, Clearwater Hammock Dunes Club, Palm Coast IGM – Savannahs at Sykes Creek, Merritt Island IGM – Spessard Holland Golf Course, Melbourne Beach Naples Lakes C.C., Naples

Recertified ACSP Courses

Foxfire G&CC, Naples certified since 1998

Old Marsh GC, Palm Beach Gardens certified since 1998

GCSAA Environmental Management Program

Stephen W. Wood, CGCS, El Conquistador C.C. in Bradenton has earned an environmental management specialist certificate from GCSAA for completing a specialization program in Integrated Pest Management.

determine the role that specific management practices may play in minimizing off-site movement and often use EPA concentrations to evaluate success. In general, these levels are established from toxicological research that determines concentrations that might cause human health concerns. But what if the levels we have been using were harmful to other species vital to aquatic ecosystems.

Environmental researchers from Canada published an assessment of nitrogen pollution influence on amphibians in a 1999 issue of *Environmental Health Perspectives*. The paper is a review of available water quality information for the Great Lakes region of the US and Canada. Of the over 8,000 water-quality samples collected in areas surrounding the Great Lakes, 20 percent of them were found to have concentrations that cause sublethal effects in amphibians. Nitrate levels as low as 2.5 par per million have been shown to affect amphibians.

The nitrate in the water appears to disturb the digestive process in tadpoles in a way similar to the mechanism in humans. The nitrate is converted by the bacteria in the infant's gut and then severely restricts the blood's ability to become oxygenated. There is a significant lack of information

TIFSP RT'S Dark Green Color, Improved Cold Tolerance, And Impressive Leaf Texture Make It Perfect For Fairways, Tees and Roughs

To Order Your Certified TifSport Bermudagrass Sod or Sprigs, Contact This Licensed TifSport Grower

South Florida Grassing, Inc. Hobe Sound FL 561 546-4191

