

*Photographed at Blackwolf Run, Kohler, Wisconsin*



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# Past merges with modern day at Collier's Reserve



Find the fairway: much of the Collier's Reserve landscape consists of waterways and native vegetation.

**This Audubon Signature Course achieves a balance between a man's playground and an animal's refuge, thanks to good planning.**

■ Play a round at the Collier's Reserve golf course and you might feel like you're at play in both the past and the present.

Man's handiwork is evident all around the course: concrete and asphalt, golf cars and gas pumps. But thanks to a successful program of habitat protection, most of the course remains as it was in centuries past: lush, wild, and untouched by man.

In 1994, Collier's Reserve in Naples, Fla.—designed by Arthur Hills and managed by superintendent Tim Hiers—became the first Audubon Cooperative Sanctuary Signature Golf Course in the U.S.

The distinction signifies that a golf course designer and superintendent have succeeded in reaching five main objectives: water conservation; wildlife conservation; habitat enhancement; energy efficiency; waste man-



**Superintendent Tim Hiers: Predicts more wildlife population Collier's.**

agement.

**It starts off the course**—Energy and water conservation begin in the clubhouse, maintenance shop and offices. Water in restrooms is on automatic shut-off; hand dryers are used instead of paper towels; toilets have one-and-a-half gallon capacity bowls; office windows are tinted for better insulation.

Recycled plastic is used for parking bumpers, benches and birdhouses, and double-vaulted tanks store gasoline and oil at the maintenance shop.

"Everything that could leak out here has containment," Hiers explains. "And even if containment weren't mandatory, it would at least be plain common sense. We want to set a standard here."

As part of the habitat enhancement, more than 500,000 native plants were placed by hand in areas that could have been planted with turf. "We don't use any (extraordinary) resources or labor to maintain them," Hiers says.

**Irrigation innovations**—Each irrigation head is placed according to the configuration of turf, down to the last leaf blade. The system distributes water exactly where it's needed, and all runoff water from turf areas flows away from native vegetation, as the bermudagrass needs a pH higher than that of the pines, and thus more frequent watering.

A computerized weather station suggests an irrigation schedule based on the daily evapo-transpiration rate. "The weather station automatically adjusts output based on current rainfall," says Hiers. "Proper program management of the weather station eliminates overwatering."

With the low pressure irrigation system uses less water, and there is less water wasted by misting or drift. Energy use is greatly reduced, and there are fewer pressure breaks in the system.

**Control products**—Weed control, which Hiers says is minimal, is done by hand. Chemical control products are used to control turf disease—the bane of the southern golf course. The bacterial product *Bacillus thuringiensis* is used for insect control. Nematodes are used to help control mole crickets.

Bio-stimulants are used to improve the health of the soil, increase microbial activity and improve cation exchange capacity.

Slow-release fertilizers reduce large flushes of growth, extend the feeding cycle and reduce the frequency and cost of fertilizer application.

The wildlife at Collier's Reserve includes eagles, woodpeckers, ospreys, snakes, otters, owls, bobcats and crocodiles.

"I believe—and I think I can prove it—that there will be more wildlife activity created when this project is completed than before the first spade hit the ground, just because of the diversity out here," says Hiers.

"What's important is that, even if you don't play golf or care about golf, golf is good for your community," says Hiers, "not only because it provides oxygen and a habitat for animals, but because it's a safe space."

Hiers has been selected to receive the 1995 President's Award for Environmental Leadership from the Golf Course Superintendents Association of America.

—Terry McIver

# Planning around playing guests

**Maintenance is up-to-date, and crews can do it all, as time is of the essence for Robert Mitchell and Greenbrier resort.**

by James E. Guyette

■ At the Greenbrier resort hotel in White Sulphur Springs, W.Va., the guests pay plenty to play, and this presents a rigorous challenge for grounds superintendent Robert V. Mitchell. "We don't want to inconvenience our guests, so we have to work around them," he says.

The Greenbrier lies surrounded by 6,500 acres of lush gardens, three golf courses and a 212-unit residential housing development.

Each year, the 60 groundskeepers and gardeners use two tons of grass seed, 200 tons of fertilizer, 100,000 tulip bulbs (including forced bulbs for indoor use), 70,000 summer annual flowers, 10,000 chrysanthemums (with an



The Greenbrier's shrubs are grown along with a 5,000 square-foot Penncross nursery and a two-acre bluegrass nursery featuring five varieties.

added 2,600 shipped in from Kentucky for the recent Solheim Cup Golf Tournament), 7,000 poinsettias, and 350 tons of sand to replenish golf course bunkers.

**They came to play**—Some 60,000 golfers annually hit the links, and when they step up to the tee they have no desire to view a work-in-progress.

"Our guests by and large are here three or four days, and when they want to play golf, they don't want to be inconvenienced by bad conditions," says Mitchell. "They don't want to see the same conditions that they see at their home country club."

The maintained areas within the three golf courses consist of 200 acres of bluegrass/ryegrass roughs, 65 acres of bent/poa fairways, 568,000 sq.ft. of bent/poa tees and putting greens.

There are also two 11,750-sq.ft. regulation croquet courts with a special mix. And unlike a golf green, a championship croquet court (where the players wear white and keep silent during shots) must be perfectly flat with no lumps or bumps.

The resort's biggest months for guests are May, June, September and October, which means maintenance is tough. Each golf course is renovated once a year. One at a time, they are closed and renovated for a week in August.

"It's hard to grow grass in August," Mitchell reports. "I'd like to do it in September, but that's impossible." No work in the spring, either. "I'd like to renovate in the spring, but we can't because of the guest traffic."

So August it is, although even that month is gaining popularity as a vacation stayover. "I don't know how long they'll give us a week per course," Mitchell laments. "We try to do everything we can not to inconvenience our guests."

Greens speeds are maintained at eight and a-half to nine on the stimpmeter—faster for

special events.

Greens on The Old White and Greenbrier are walk-mowed; a triplex is used on the Lakeside greens. All three courses use lightweight mowers on the fairways.

**All-round turf care**—Embark is used for seed suppression in early spring. Primo is used throughout the summer to help promote an increase in bentgrass population on the fairways. TGR is applied to the croquet courts to deter *Poa annua*. Split applications of pre-emergence herbicides (pendimethalin on roughs and Dimension on fairways) are used. The black turfgrass ateniensis and the Japanese beetle grub are treated as needed via rotating insecticides. Fungicides are used on all greens, tees and fairways, and aeration of roughs and fairways begins in November.

The Greenbrier is in the upper limits of the transition zone because of its 1921-foot elevation, and it tilts toward the cool-season.

Much of the resort's grounds are covered with a "condo mix" that tolerates sun and shade. "We change that mix from time to time as better grasses become available," Mitchell explains. The current lineup consists of red fescue with Baron, Midnight, and America, plus Manhattan II ryegrass.

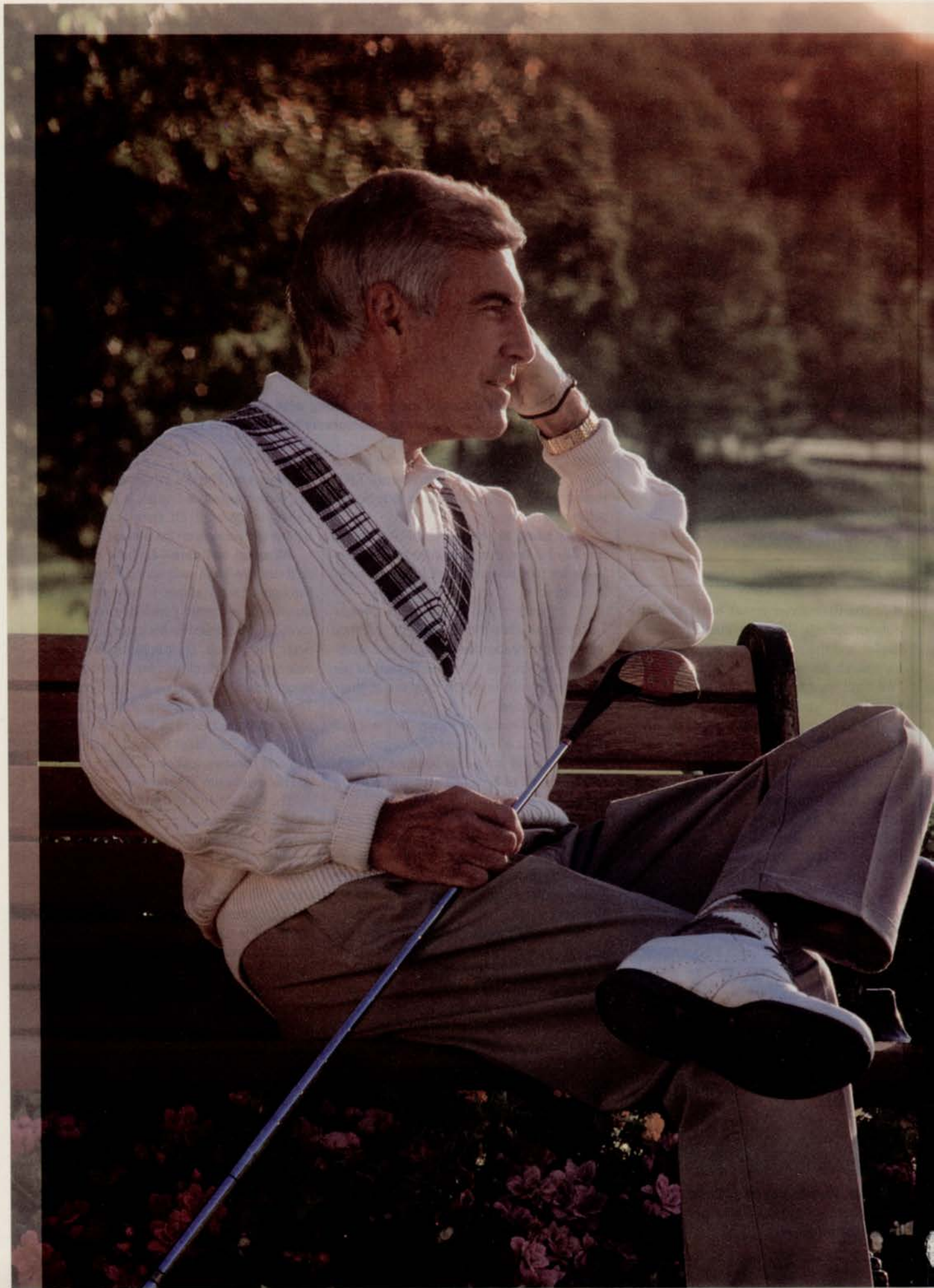
**Tree time**—Much of The Greenbrier property is wooded. "We have a lot of trees to take care of here." The consulting arborist is the Davey Tree Expert Co., and one full-time trimmer and a helper is on-staff.

There are about 20 Dutch elms to be cared for. "We climb them at least twice a year," Mitchell reports. "We try to keep ours as disease-free as possible both mechanically (removing sick branches) and by injection with fungicides and spraying with dormant oil."

—James E. Guyette, former editor of *Lawn*



**Mitchell: Guests are here three or four days, and they want to play golf, not view construction.**





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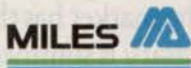
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# Growing grass when it doesn't want to

**That's what's going on at Soldier Field and the Bears' practice fields over the course of 12 months.**

by Ken Mrock

■ As groundskeeper for the Chicago Bears, I have to manage turf that takes the hardest beating in sports turf. Over the past nine years, I've seen the demands on our turf increase dramatically. The players have become bigger and faster, and training is almost year-round. This is tough because the Midwest has such a short growing season.

If that weren't enough, consider aesthetics too. The Bears have about 10 television media outlets along with huge radio and print coverage. The integrity of the playing surface is always critical.

This past season we had five mini-camps, several twice-a-day practices in addition to our normal four practices per week. On top of this, the Bears share their training field with the Lake Forest College football team for five home games.

With this schedule, the field doesn't have as much time to grow grass. So what do we do? Punt? Kneel down with the ball? No way.

Assistant groundskeeper John Berta and I have put together an aggressive mix of seeding and fertilization together with a tight maintenance program to ensure Bears' ballplayers have the best possible playing fields.

**It begins in March**—Starting at the end of March, we pre-germinate seed—a mixture of Kentucky bluegrass, perennial ryegrass and *Poa supina*. As soon as the field is workable, we aerify with a Ryan GA-30 or Toro Greensaire. We bring up as many plugs per square foot as possible. This speeds germination and establishes the plant a little lower in the turf surface, somewhat protecting the plant from the cleats of the players.

We allow the plugs to completely dry. Then we broadcast the pre-germinated seed mix over the entire practice field and add another 7-8 lbs./1,000 sq. ft. of dry seed broadcast mainly between the numbers. This area is the most worn due to the short passing game of our "West Coast Offense"

where three or four receivers line up between the hash marks and numbers, cutting and spinning their way up the field. With the receivers, of course, come the defensive backs and linebackers. This puts six to eight players in a small area.

Since we have no internal drainage and the practice field was constructed with Turface calcined clay, we have continued to apply Turface and our topdressing soil to the practice field with a Turfco Metermatic top dresser. We apply this mix across the entire field then lightly drag all the material in with a draft mat. Then we fertilize with a starter fertilizer, usually Vicksburg Chemical's K-Power 13-34-12. It offers potassium nitrate for the established turf, quick release nitrogen that works well in cool soil, and phosphorous for seed germination and root establishment. Then we apply pythium control and cover the entire field with a frost blanket.

**Spring mini-camp**—Mini-camp hits in late April—three days of twice-a-day practices with about 80 players. I call this our opening day. Daily maintenance on the field is quite aggressive. Divots must be replaced after every practice. The ones that can't be "found" are replaced with a mixture of seed, topsoil and Turface.

In early May, we fertilize with K-Power 12-0-42 along with spot treatments for broadleaf weeds. A Kiffco B-140 water reel irrigates the field before dawn so that the plants are dry by evening. Under normal conditions, we irrigate about twice weekly, putting down ½-1 inch of water per application. By mid-June, we're putting down a half-rate of K-Power 12-0-42. This strengthens the field for the last two mini-camps.

Around mid-July, we take a break in practice scheduling and the team moves to the University of Wisconsin at Platteville for four weeks. Although it's a tough time for seed development, it's our only window. We aerify the turf in two directions, overseed, topdress and make another application of 12-0-42. Fungicides and insecticides can be used, but sparingly. We also do another spot spraying for broadleaf control, usually dicamba for knotweed and clover control.



**Going gets tough**—August is the toughest stretch of our turf management program. Our team is in training camp, two-a-day practices with 80 players. We mow daily after every practice, sometimes twice a day, to allow a light rolling. We maintain the turf at about 1½ inches with a Jacobsen Tri-King 84 inch reel-type. This is a lightweight mower and allows us to pattern the turf five yards in one direction and the next five in the opposite direction. The ballplayers like close-cut turf.

With cooler weather in September, we shift our fertility program to 18-3-18 with both quick and slow-release nitrogen. When the nights begin to drop to 35 F., we pull out the frost blankets to raise the soil temperatures. This really kicks in the fertilizer.

We also use our rain/snow tarps as needed, covering 140 x 65 yards in seven sections that zipper together to form one solid tarp. Other than during a Bears practice or a college game, no rain or snow is allowed to accumulate on the practice field.

As the season progresses, we pump 4 million BTUs of heat via kerosene-fired heaters under the tarps to keep the field from freezing. The only time the field is uncovered is for practice during November and December and hopefully January—play-off time. The increased levels of potassium allow us to literally beat up this field, but it keeps getting up. In mid-November, we apply a full rate of 12-0-42 to take us through until the spring.

—The author is grounds superintendent for the Chicago Bears professional football team.