



A pedestrian bridge divides the 3.5-acre lake that provides irrigation for the property.

ENVIRONMENTAL BENEFITS OF USING RECLAIMED WATER

Reclaimed water, also known as recycled water, is recovered from domestic, municipal and industrial wastewater treatment plants and is treated to standards that allow safe reuse. Wastewater treated to certain defined standards is typically safe for most uses, except human consumption.

The use of reclaimed water for urban landscapes, parks, golf courses and sports fields is rapidly growing, and offers the following benefits:

Decreased diversions of freshwater from rivers, streams, lakes and other ecosystems.

- Reduced use of potable water by industrial, housing and recreational development projects.
- Reduction in the amount of groundwater withdrawal, which has an impact on baseflow in many rivers and streams.
- Increased water quality, by reducing the amount of nutrients entering our rivers, lakes and other bodies of water.

There are no federal guidelines regarding the use of reclaimed water. The U.S. Environmental Protection Agency has left it up to each state to develop its own regulations regarding reclaimed water use. The purpose of these regulations is to protect human health and water quality, meaning that wastewater must be treated to certain defined levels (using a variety of proven methods) to destroy specific pathogens and remove harmful microconstituents.

Class A effluent, the water used for irrigation at Camelback Ranch, is one of five classes of reclaimed water recognized by the Arizona Department of Environmental Quality. Class A effluent has a total nitrogen concentration of less than 10 mg/l, minimizing concerns over nitrate contamination of groundwater beneath the sites where it is applied.

Equally important for the suitability of reclaimed water to irrigate turfgrass is its salinity, or salt concentration. High salt concentrations reduce water uptake in plants, lowering the osmotic potential of the soil. In other words, the quality and suitability of reclaimed water for landscape irrigation may vary considerably from water agency to agency, so it's vital to assess and monitor the quality of reclaimed water, as well as to develop a landscape management program that addresses water quality issues, such as salt buildup.

Phoenix, was involved in all of the site's irrigation except for the sports fields.

"We've been involved in quite a few spring training facilities and sports turf projects in Arizona," says Doug Macdonald, vice president and principal of Aqua Engineering, adding that in this project, Roger Bossard, veteran

sports field manager of the Chicago White Sox, designed and oversaw those ball field systems, as he did with every aspect of the fields' construction.

Bossard, who manages U.S. Cellular Field in Chicago, chose Muellermist Irrigation Co., to install the fields' laterals and sprinklers. Aqua Engineering

designed and oversaw irrigation for the remainder of the property.

"This project was on the larger side, a high-profile project," says Macdonald. "We began planning for it two years prior to its opening."

Aqua Engineering developed the construction documents for the irrigation system and central control system used to irrigate the site's mixed-use landscape areas. The system's weather station provides data that provides irrigation based on daily, on-site evapotranspiration rates, says Macdonald.

The company also designed and oversaw the installation of a pump station, featuring low pressure and high-volume discharge with a recirculation feature, that maintains the aesthetic component of the lake. A variable-frequency drive adjusts pump speed to provide constant discharge pressure to the irrigation system, reducing energy consumption considerably, says Macdonald.

The design and incorporation of a lake liner and appropriate edge treatments was also crucial to the long-term health, usefulness and attractiveness of the lake, he adds.

The Camelback Ranch project landed several prestigious design and project management awards, and earned Aqua Engineering special recognition from the American Society of Irrigation Consultants (ASIC) earlier this year.

"This project was a special project, and we're proud to have been a part of it," says Macdonald. "Camelback Ranch is a destination opportunity for many people."

Gesicki agrees. "The project involved 18 months of coordination and cooperation among many people, and there were lots of challenges, the largest probably being scheduling," he adds. "I think I can say for everybody involved in the project that Camelback Ranch provides a great environment for people to enjoy baseball and its many other amenities." **LMI**

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Keith Carracher, owner and president of Complete Property Maintenance is the perfect example of a company culture that encourages building from within. Whether it's passing out hats and candy on a Friday afternoon, returning the company store's profits back to employees around the holidays or promoting from inside, it's about ensuring everyone is part of the company culture. Carracher, who started as an account manager 15 years ago, became an example when he was later named general manager before being offered an ownership stake.

INSIDE INFO

Company: Complete Property Maintenance

Founded: 1977

Headquarters: Coconut Creek, FL

Employees: nearly 275 full-time, 40 part time

2009 revenue: \$14 million

LM Top 150 ranking: No. 90 (tie)

Key to being a maintenance leader: You have to pay attention to your employee retention. It's the No. 1 thing my customers want. They don't want to see a different crew; they don't want to see a different foreman. You have to respect your employees. We involve all our supervisors; we ask their advice.

TOP TRENDS

› **Contract renegotiations.** A lot of our customers have been long term. We've had to be proactive in going after them. They can't pay their bills, so we've had to come up with different programs other than what the contract states.

› **Service changes.** A lot of landscape installation companies have tried to become landscape maintenance companies. It has gotten very competitive. People are willing to do work just to pay their bills.

› **Employment shift.** It used to be employees drove our company. We control our destiny again because of the unemployment rate. We've always been able to get employees. They used to drive the wage level. Now that no one is working, they're willing to work with us more. We have gotten control back; it's a good feeling.

TOP OBSTACLES

› **Lack of loyalty.** The customer that was so faithful to us for so many years — if there was a problem they'd sit down and negotiate — now the almighty dollar has changed the whole perception. If they can save money because of the pressure they're under, they won't hesitate to terminate a contract.

› **Competition.** We have so many more people out there. There are so many illegitimate companies. Nobody governs them; nobody checks them to see — do they have insurance; do they have workers' compensation; are they paying their taxes. People will hire them if they can save money. They don't care about the legalities. It's hard to be competitive when people are willing to do work just to stay afloat — not even to make a profit.

TOP OPPORTUNITIES

› **Full service guarantee.** When we do a landscaping installation job, that's the front door. We can also do the irrigation, landscape lighting, hardscapes; we can do everything they need done. Any landscape job I do we warranty as long as we maintain the property. I only do it if we provide the full-scale service. If I'm doing all the services, I should be accountable. We've had a lot of success on that.



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LM'S OPERATOR OF THE MONTH » BY RON HALL



Alan White will soon begin his third decade in business. As the founder and owner of Ontario, Canada-based Turf Systems he's learned a few important lessons. "Be a part of and participate in your industry," White says. "It will keep you prepared. You have to know what's going on around you. You're never too small to be involved and take an active role in shaping the industry."

What has been your company's experience with the lawn care pesticide ban the Ontario Provincial government implemented more than two years ago?

Customers want green, weed-free lawns. This has been a very difficult season for our customers — and for us. This summer, we had tropical conditions for weeks at a time. It caused lots of problems. We've never seen so much crabgrass. The same goes for Japanese beetles. Chinch bugs have been out of control, too, and we don't have anything that we can use on them.

What sense do you get of customers' reaction to the pesticide ban?

Customers support the proposition of reducing risk. But, in terms of pesticides, most customers base their perception of risk on what they perceive and not on what they know. While our company has always used very little (pest control) product, I've always been a proponent that they should be available for use by the industry.

What has been their reaction to the conditions of their lawns this season?

Customers are used to seeing green lawns. They don't ask how we do it. They don't ask for a weed control or an insect control. They trust us to do

what needs to be done. We work hard to build that trust. They're not accustomed to seeing so much chinch bug damage or so many weeds. You can see the frustration in their eyes... especially when you inform them that if they were in another province, we would have a product.

Do you see any possibility that the provincial ban will be reversed? Not anytime soon. The liberal government has another year in office, so it wouldn't happen before then.

Alan, you've advocated the use of IPM your entire career. As vice chairman of the IPM Council, where does the IPM accreditation program stand now?

We designed the IPM accreditation program to eventually be applied across multiple sectors and multiple disciplines — lawn care, golf, structural pest control, arboriculture, parks and public works. Lawn care was the first sector with a program and an auditing component. Then golf. There is no IPM accreditation for public works, but it can have IPM-certified agents. There's no IPM accreditation program for lawn care in Ontario, but the structure is in place and can be implemented.

AT A GLANCE

COMPANY: Turf Systems Inc.

FOUNDER AND PRESIDENT: Alan White

HEADQUARTERS: Burlington, Ontario, Canada

FOUNDED: 1991

SERVICES: Lawn care

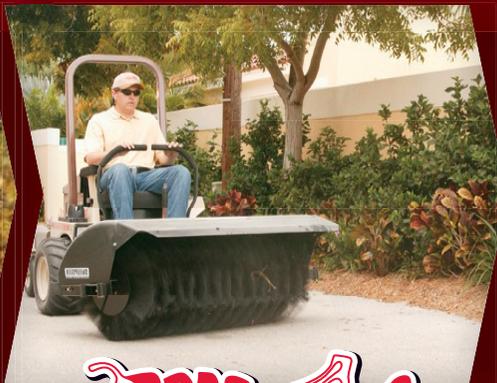
INDUSTRY INVOLVEMENT: Member of PLANET, helped develop IPM accreditation program, board member of IPM Council of Canada, helped bring Project Evergreen to Canada

WEBSITE: TurfSystems.ca

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IDENTIFICATION TIPS

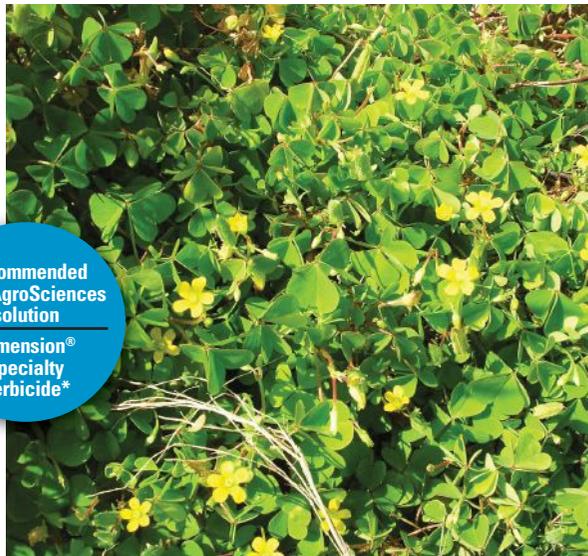
- ▶ This plant, which prefers cool, rich, moist soils, is a winter or summer annual. It can also be a biennial in coastal areas.
- ▶ It features a single stem or branched upright growth, 6 to 18 in. tall, and its yellow flowers bloom nearly year-round.
- ▶ Leaves are highly variable, from hairless to lightly covered with long wavy or cotton-like hairs.
- ▶ Groundsel reproduces by seed; each plant may produce three to four generations of seeds in one season.

CONTROL TIPS

- ▶ Because the seed is easily spread and can potentially deposit numerous seeds throughout the season, the best option for control is an early-season application of a pre-emergent broadleaf herbicide with at least three months' residual, such as one containing the active ingredient isoxaben.
- ▶ To prevent common groundsel infestation, use good sanitation practices supplemented with pre-emergence broadleaf herbicides.

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CREEPING WOODSORREL

Oxalis corniculata

IDENTIFICATION TIPS

- ▶ This summer perennial contains a slender, shallow taproot and roots at nodes along the creeping, slightly hairy stems.
- ▶ Leaves are deeply lobed, heart-shaped and may be green to reddish-purple.
- ▶ Flowers are small and bright yellow, with five petals, and form in clusters of one to five at the end of slender stems.

CONTROL TIPS

- ▶ Mowing, fertilizing or irrigating turf is not an effective method of control

— this plant can actually be spread through such practices.

- ▶ If lawn mowers are used where creeping woodsorrel is growing, wash or air-spray mowers to remove seeds and clippings before moving to a weed-free turf.
- ▶ Once established, it is very competitive. Application of a pre-emergent herbicide labeled for *Oxalis* control in the fall is a good option. Two applications, four to six weeks apart, may be needed to get all the seedlings.

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For more information regarding these and other turf weeds — and related control technologies and tips — please visit www.DowProvesIt.com or call 800/255-3726.

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TIPS FOR BULB & PERENNIAL COMBOS



Bulbs ready for fall planting.

CORNELL UNIVERSITY researchers have scientifically examined the art of successful bulb and perennial pairings. Professional landscape designers have long known perennials and spring-flowering bulbs such as tulips, narcissi and alliums make great companion plantings. Not only do the proper pairings look great together, they can be mutually supportive. For example, colorful spring bulbs can complement emerging perennial foliage — and when that foliage matures, it can mask the fading leaves of post-bloom bulbs.

For the most part, designers have relied on a practiced eye and experience to create combinations that spark spring magic. Now researchers at Cornell University have cast the objective eye of science on the issue. In a series of trials covering four seasons at the university's Ithaca, NY, trial grounds (USDA Zone 5), the Cornell team put various pairings of bulbs and perennials to the test. Their results are now available to all online at Hort.Cornell.edu/combos.

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Cornell professor Dr. William B. Miller, who is director of the university's Flower Bulb Research program, led the Cornell University team.

"The idea of pairing bulbs and perennials to achieve multiple goals is so desirable that we felt it deserved more than an anecdotal approach," he says. "We

created an objective study to document what works and what doesn't in a typical spring garden."

The combination trials were designed to achieve four goals:

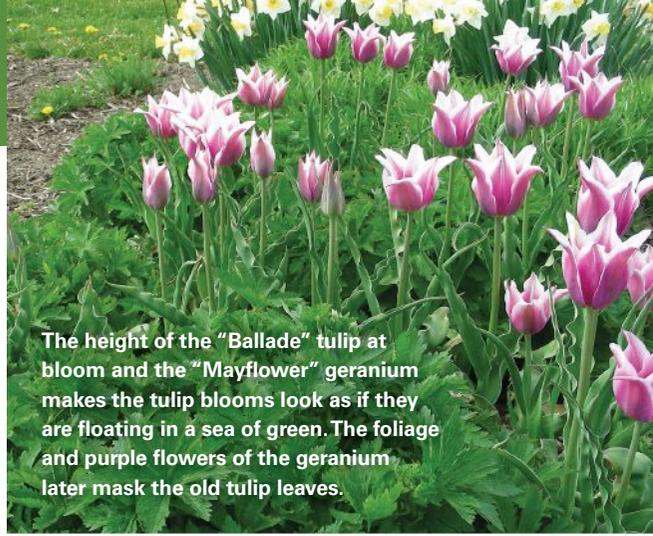
1. Look at how early bulbs help extend the bloom season in the garden.
2. Explore how perennials might best be

used to mask the dying foliage of post-bloom bulbs.

3. Consider leaf texture as a design element.
4. Examine the various roles color plays in creating successful combinations.

The Cornell scientists evaluated 15 plantings for their overall performance and benefits, and did not necessarily look for combinations that bloomed simultaneously. They focused on combinations that worked.

For the researchers' tips on what makes a successful combination of bulb plantings, please see "5 Steps to Successful Combos" on page 32.



The height of the "Ballade" tulip at bloom and the "Mayflower" geranium makes the tulip blooms look as if they are floating in a sea of green. The foliage and purple flowers of the geranium later mask the old tulip leaves.

WEB EXTRA

For all 15 combinations, visit www.landscapemanagement.net/Cornellbulb-research

This article was contributed by the International Flower Bulb Centre. For more information about flower bulbs, visit bulb.com.

continued on page 32



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