Buffalograss works well as a low-maintenance rough, in this case around a zoysiagrass fairway at Briggs Ranch Golf Club near San Antonio, Texas.

Buffalograss on the Golf Course

Two case studies at golf facilities in drought-stricken Texas highlight the value of buffalograss as a low-maintenance turf requiring less water.

BY TY McCLELLAN AND BUD WHITE

Let's face it; buffalograss (*Buchloe dactyloides*) is rarely given serious consideration for use on golf courses. It has never been in vogue, but this should change for several regions in the U.S. Before writing off buffalograss as an option for your golf facility, this article features two case studies combined with new information that may be of interest to you.

Most turf managers know that buffalograss is a low-maintenance, warm-season turfgrass with a slow growth rate and excellent drought resistance. It uses less water and requires less mowing and fertilizer than other turfgrasses common to golf. What you may not know is that significant research and turfgrass breeding efforts have been in place for buffalograss in recent decades. Much of this research was funded by the USGA, and much of it has been done at the University of Nebraska-Lincoln (Buffalograss: Tough Native Turfgrass provides a great overview of the history and accomplishments of the buffalograss breeding program at UNL). As a result, there are newer, improved buffalograss varieties now available that possess better density, darker color, finer texture, improved winter hardiness, and faster establishment from sod or seed. Newer varieties offer much better quality and playability than previous generations of buffalo grass, and they are better suited for use on golf courses. If you haven't observed firsthand recent releases of buffalograss varieties, then you almost certainly have a misconception (and likely bias) against this turfgrass species for golf course use.

At two Texas golf facilities, the availability of improved buffalograss varieties that use less water and resources while providing playable golf course roughs met the challenges faced during drought conditions in 2011 and 2012. The following two case

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Buffalograss provides nice visual definition surrounding bermudagrass tees and goes well with naturalized areas at Horseshoe Bay Resort in Texas. Water use for tee complexes is reduced because buffalograss surrounds are not irrigated; only the bermudagrass teeing surfaces are included in the automatic irrigation design.

studies provide details of how buffalograss is well suited to handle heat stress and limited water.

CASE STUDY 1

Briggs Ranch Golf Club, San Antonio, Texas — Briggs Ranch Golf Club, located in the beautiful and rugged hills west of San Antonio, is a Tom Fazio design that opened in 2001. Its architectural design and features fit perfectly into the surrounding native landscape and terrain. Buffalograss and naturalized areas were included in the layout to reduce maintenance and water use as well as blend the course into its natural surroundings.

The varieties Density, 609, and Eco were used in the primary and secondary roughs and were established with sod. The buffalograss roughs not only require little maintenance, but their bluish hue adds beautiful contrast to the zoysiagrass tees, fairways, and intermediate rough. Mowing height is about five inches, and the roughs are mowed as needed, or about once a month. The density of buffalograss is thick enough to help naturally fend off weed competition and minimize invasion, but not so thick that players have any difficulty finding and playing their golf balls. This is important to point out because the five-inch height of cut does not slow play.

The buffalograss has been virtually pest free, which is another benefit of this species, and it thrives in this dry and difficult environment. As evident during the lack of rainfall in recent years, buffalograss has impressive drought resistance and can maintain its color well into a drought. And if it eventually does go into drought-induced dormancy and turns off-color, it resumes its color and growth quickly after receiving small amounts of rainfall or irrigation.

Fertility is provided by granular pre-emergent herbicide applications on a fertilizer carrier, but little to no fertility is required after establishment. Superintendent Chandler Masters has only been at Briggs Ranch since July 2012, but he notes that buffalograss is more sensitive than bermudagrass to post-emergent herbicides. However, with the higher height of cut and density of buffalograss, herbicide applications are needed infrequently.

Many consider low-maintenance turfs like buffalograss as only being suited to low-budget facilities or limited to courses not highly regarded in the golfing community. Not so! The USGA was proud to award the 2012 Women's Mid-Amateur Championship to Briggs Ranch Golf Club. This, one of the USGA's 10 national amateur championships, took place in October 2012, while still in the midst of an extreme drought. Briggs Ranch Golf Club was up to the challenge, in part because of the buffalograss roughs. Not surprisingly, a majority of the players in this USGA national championship had never experienced buffalograss on a golf course, so naturally there was interest and even a bit of concern about its playability. Rest assured, after just a few practice rounds, players and USGA officials were impressed with playing conditions . . . or as pleased as players could be playing from the primary and secondary roughs.

CASE STUDY 2

Horseshoe Bay Resort, Horseshoe Bay, Texas — Summit Rock Golf Course, one of four golf facilities at Horseshoe Bay Resort, just opened in 2011 and is a Jack Nicklaus design. The design includes significant thought and planning for turf selection, incorporation of naturalized areas, and the use of low-maintenance turf. Buffalograss is one of the foundation turfs to meet all the criteria of reduced water, low inputs, and limited maintenance.

Ken Gorzycki, CGCS, is director of agronomy at Horseshoe Bay Resort and an active member of the USGA Green Section Committee. He oversaw the grassing details and establishment of this facility. Ken selected buffalograss varieties 609 and Density for the roughs and around teeing surfaces. All buffalograsses were established from sod, and it was slightly more expensive than bermudagrass sod. It was also slightly more difficult to install because it had less sod strength than bermudagrass, but it established nicely, according to Gorzycki. Manual weed removal was used during establishment.

The use of buffalograss in tee surrounds is especially interesting because they are not irrigated; only the bermudagrass teeing surfaces are included in the automatic irrigation design. This greatly reduces water use, and the total irrigated area is less compared to most tee complexes.

Buffalograss possesses good tolerance to traffic, including carts, but damage can still occur where carts do not remain on paths.

Ken reports that the buffalograss roughs and surrounds require very little mowing. It is maintained at 5.5 to 6 inches and is only mowed as needed, usually less than once per month. Gorzycki says the higher the height, the better the density and the less the need for mowing, often as little as three times per year. The thin, whispy growth habit does not create a dense turf, and golfers can easily find and play their balls without problems. Weed control is largely accomplished using pre-emergent herbicides and then augmented as needed with post-emergent applications or manual weeding. After establishment and once the buffalo grass reaches maturity, weed pressure is relatively small because of the higher cutting height, low irrigation regime, and competitiveness of the buffalograss. Fertility requirements are met predominately from the fertilizer carriers used in granular pre-emerge herbicide applications, as fertility needs are little to none after maturity.

Buffalograss has shown relatively good shade tolerance at Summit Rock, but its weakness is traffic tolerance, both foot and cart. This should be a consideration when identifying areas for establishment.

At higher mowing heights, the distinctive buffalograss seedhead will be visible, but it has little, if any, impact on playability.

HELPFUL LINKS AND RESOURCES

This is not the first time buffalograss has been written about in the *USGA Green Section Record* as a practical turf for use in golf, though it has been a long time. Going back to 1982, an excellent article — Buffalograss – A "New" Turfgrass for Golf Courses? — contains valuable background information, including management and establishment tips for buffalograss. It is

suggested reading and it is interesting to note that the justification for buffalograss use then remains the same today: cut costs, reduce maintenance, and save water. Further suggested reading and useful information can be found in Low Maintenance Troubles, published in 1998, and Buffalograss Management Research, published in 2002.

With minimal use so far, there remains plenty to be learned regarding establishment and management of buffalograss. Additional resources that may be of interest include the following for buffalograss lawns, albeit they are still useful for golf course roughs.

Management of Buffalograss Turf in Nebraska

Buffalograss Management Calendar for Nebraska

Establishing Buffalograss Turf in Nebraska

Buffalograss Establishment and Management Guide from Native Turf Group

'Cody' Buffalograss Brochure – Newest Release from Native Turf Group

As with all turfgrass species, buffalograss is not well suited to every golf course or situation. It is a warm-season turfgrass that performs well on most soils, except sand based, and it can be used in many regions of the U.S., but it is best adapted to the Southern Plains, Southwest, and lower Transition Zone where rainfall is less than 30 inches per year, with periods of heat and drought during the summer months. Please visit NTEP 2002 National Buffalograss Test or NTEP 2003-2006 Buffalograss Quality Ratings to determine which buffalograss varieties perform best in your region.

CONCLUSION

Given the existing economic climate combined with environmental concerns facing the industry, namely water use and its availability, it is no secret that we need turfgrasses that require less water and fewer inputs. Or, when drought conditions occur, we need turf that can still maintain playability and meet golfer expectations. It is key for almost every golf facility to reach greater economic and environmental sustainability going forward. Fortunately, this aligns nicely with the genetic makeup of buffalograss, the only turfgrass species native to North America.

It is hoped that the information in this article provides a fresh perspective on a turfgrass that clearly has potential for use on golf courses but has been rarely utilized. Suffice it to say the potential for buffalograss has never been fully realized. Or perhaps just not until now. An economic downturn that began in 2008 coupled with drought conditions in 2011 and 2012 has exposed weaknesses and needs in the industry, and without such extremes we may have missed the value and practical application of buffalograss. If your golf facility needs a new stand of turf in the roughs, if less maintenance is desired, or if the existing turf is poorly equipped to meet the challenges of limited water availability, then buffalograss may be your answer.

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While buffalograss does best in full sun, it is performing well in shaded areas of the deep rough at Briggs Ranch Golf Club.

Maintenance around trees can be reduced when buffalograss is used beneath trees, as is the case near this green at Horseshoe Bay Resort.