

Shared Visions and Leadership: Reflections on the Past and Future of the Golf Course Turf Industry

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The 2010 Wisconsin Golf Symposium offered us all a chance to reflect on what we'd thought would be the future over the past 25 years. Some of the predictions came true, others didn't. Predictions and visions ranged from new technologies, including computers and equipment, to biology and environmental protection. Much of the time it was those efforts that had a shared vision, and were led by persons committed to accomplishing the task, that developed into products and methods we now take for granted. Other cases failed because they lacked a shared vision and/or leaders who were committed to success of the idea. Some of the ideas now seem whimsical, such as using hovercraft as golf carts, while other ideas were serious but derailed for the reasons given. Both the successes and failures of the past 25 years should serve to inform us of the actions we take now, and how our actions will position ourselves and our world 25 years from now.

One of the most insightful activities in the past 25 years for the golf course industry was the USGA/GCSAA visioning session in 1985. The group, with representation by many facets of the golf course turf industry, identified a number of items they felt would position the industry for better success. These included the development of new grasses that required less water and maintenance costs, research on water quality and quantity for turf maintenance, and the development of a computer-based system to search turfgrass-related information. Both organizations, often in concert with state associations such as the Wisconsin Golf Course Superintendents Association, supported research, outreach and teaching efforts associated with a shared vision.

Efforts to develop and have newer grasses adopted to reduce

water use were largely successful. Numerous grass species were evaluated by university researchers for their ability to survive with less irrigation and/or irrigation with non-potable water. We now see grasses with low water use such as fine fescues and buffalo-grass being used in out-of-play areas. Research continues to focus on grasses for in-play areas that have reduced water and management requirements. Kentucky bluegrass and perennial ryegrass varieties have been developed that can maintain better turf quality under fairway conditions than in 1985. Certain bentgrass varieties have been bred with improved heat tolerance, improving putting green surfaces in the South by expanding the range of creeping bentgrass (Engelke et al., 1995). New velvet bentgrass varieties are showing potential to use less water and have better dollar spot resistance than creeping bentgrass (DaCosta and Huang, 2006 a,b; Koeritz and Stier, 2009).

Fine fescues are being developed that can provide acceptable fairway turf in some situations which will ultimately reduce irrigation and mowing costs. In our 12 years of evaluating fine fescues for fairway use at the OJ Noer Turfgrass Research and Educational Facility, we've gone from a few barely acceptable varieties to over one dozen varieties with good to excellent performance represented by at least three species (Horgan et al., 2007; Koeritz et al., 2005; Koeritz et al., 2003; Stier et al., 2002). As snow mold fungicides become less available, we're finding that fine fescues and colonial bentgrass have superior resistance to snow mold diseases compared to creeping bentgrass when maintained as fairway turf (Fig. 1; Gregos et al. 2000; Gregos et al., 20XX).



Fig. 1. Loss of fungicides to protect against snow molds on golf course turf will require development of resistant grasses like fine fescues.



Fig. 2. Roundup Ready® creeping bentgrass was unharmed by applications of glyphosate that killed normal bentgrass (top and center grass plots).

One of the other smashing successes developed from the USGA/GCSAA visioning committee was the Turfgrass Information File (TGIF)/Turfgrass Information Center (TIC; www.tic.msu.edu). In 1985, few people had even seen a personal computer, let alone used one. By the early 1990s, though, we were able to search library files for turfgrass information by plugging a phone line into a computer and using a DOS-based system to enter search terms. Of course, now the system is Windows-based, allowing much more powerful searches in a fraction of the time it took 20 years ago. Superintendents use TGIF to search for answers to problems such as minimizing the damage from hydraulic spills or other turf injuries.

Researchers use the system to develop new research ideas which develop information that can be relayed to superintendents. Students use TGIF to enhance their learning. Our college librarian once told me that the TGIF was the best database for a single topic which she'd ever experienced. Meanwhile, Peter Cookingham and his staff continue to improve the TIC while numerous industry partners contribute funds towards an endowment to make the TIC freely accessible to all. The WGCSA has done their part by contributing sufficient funds to purchase a lifetime subscription for UW-Madison students and researchers.


Not all good ideas came to fruition as initially envisioned within the past 25 years. We still don't have laser-cutting units on mowers or self-guided mowers on our golf courses. The ideas and patents are there, though, and engineers are working on perfecting them. Other ideas may never see the light of day.

The efforts to develop *Poa annua* as a putting green turf have hit a perhaps insurmountable wall for several reasons. Biologically, the best varieties seem to have poor turf seed production. The genetics of *P. annua* may also control the ability to produce a useful grass, as more recent indications are that many *P. annua* ecotypes are capable of forming a higher quality putting green turf, but only after years of being maintained as a putting green turf. Further research into the biology of *P. annua* may be hampered by lack of committed researchers—there's only really ever been two breeders who worked on *P. annua* (Dr. Don White and Dr. Dave Huff). Economic and regulatory forces have also squelched development of *P. annua* as a putting green turf due to the lack of a shared vision. *Poa annua* has been listed as a noxious weed in some states and interstate transport is illegal.

The use of biotechnology to develop genetically-modified grasses for reduced maintenance and enhanced environmental benefits at first glance seems to have failed its goals. Roundup Resistant® creeping bentgrass was developed by the Scotts Co. in part as an environmentally beneficial solution to controlling *P. annua* encroachment in golf course turf (Fig. 2). The ultimate goal was to reduce irrigation and fungicide inputs by maintaining pure

stands of creeping bentgrass. Despite good research and development, legal challenges by advocacy groups and industry associations squelched the deregulation of all genetically modified grasses because of the lack of a shared vision.

However, breeders are starting to find grasses with naturally occurring glyphosate resistance, so one could argue the effort was not all in vain. In another case, Kentucky bluegrass varieties that were genetically modified to grow slowly so they would rarely need mowing were on track for commercialization. The environmental benefits were huge—less fossil fuel and water use, less chance of ever being invasive in natural environments, high potential desire by homeowners who didn't want to spend their Saturdays mowing their lawn. The project ended up dying largely in part because of the lack of a shared vision: members of our own Green Industry (landscape contractors) challenged the deregulation of the grass as they feared less demand for mowing jobs if the grass was ever utilized. Nonetheless, we know now what types of genetic activities are needed for slow-growing Kentucky bluegrass, and I expect breeders will slowly incorporate naturally occurring characteristics for slow-growing varieties in the future.



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In any large-scale effort, failures are par for the course and information learned from them often sets the stage for future successes. America is in the midst of tough times not experienced since the Great Depression. A famous quote “The measure of a man is not whether he falls down, but whether he gets up again” has meaning for our future.

We achieved economic success after the Great Depression, and the start of 50 years of growth and economic boom times in the golf industry, by emerging from World War II as the only developed country capable of producing items needed and desired by the rest of the world. Such a watershed event is unlikely to lift us out of the doldrums this time around, particularly as other nations like China, India and Brazil emerge as economic forces.

There are other ways for the golf course industry to revitalize. By and large the goals of the USGA/GCSAA met with success because of the development of a vision shared not only by the committee but by golf course superintendents, allied industries, regulatory agencies, and academia. In 2011, the economy is tough and the perception of golf courses as being elitist users of scarce resources (e.g., water, gasoline) while [potentially]

harming the environment is real and considerable. At the same time, the economic and environmental benefits of golf courses are known, just not widely (Beard, 2000; Beard and Green, 1994). One could argue we need a national visioning session for the golf course industry now even more than in 1985.

Where will the vision come from, and how will it be developed? The USGA has retrenched its research program in order to secure its core mission (not research) for the future. The GCSAA is floundering. Universities rely more than ever on grant and gift funds to operate and are less able to commit effort for unfunded activities. Of course, great visions tend to develop from the miasma of society through the focus of one or a few people who then spread the vision widescale—think of Martin Luther King, Mahatma Gandhi, George Washington and the Founding Fathers. Three of the four founding members of the national Sports Turf Managers Association, a turf association that continues to grow despite a tough economy, were from Wisconsin. Does Wisconsin need to lead again, this time for the golf course industry? Do we have the right people? Are you one?

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