Maintenance Up the Middle:
Great Golf and Water Conservation are Not Mutually Exclusive

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Great golf and water conservation are not mutually exclusive. The enjoyment of golf is shared by many and can last a lifetime. As social, environmental and economic realities shift, the way golf courses are maintained will advance. The changes in the perception and the use of water re–sources on golf courses can serve as a catalyst to promote maintenance up the middle which, in turn, will lead to a more enjoyable and affordable game.

"Maintenance Up the Middle" is not a complicated golf course management concept. Focus on the playing areas in the middle of the course: tees, fairways, and putting greens. Shift the focus away from the rough. Golfers do this when they play golf. Those involved in golf course management would be well served to do the same when caring for the course.

This article will define and promote the concept of "Maintenance Up the Middle," in order to positively influence current economic realities at golf courses, serve as mechanism to reduce inputs including water, and benefit those who play the game.

Current Issues in Golf: Why Changes are Needed

The economics in golf have been bleak over the last six years. The number of golfers peaked in 2005 at 30 million and declined to 26.1 million by the end of 2010. In fact, there were more golfers (27.4 million) in 1990 than there were in 2010. All this has occurred while the number of golf courses increased by 30% since 1991 (Yasuda, 2012). As a result, most golf courses have seen flat or declining revenue over the past few years with little ability to raise prices.

On the maintenance side, energy intensive inputs such as fertilizer, fuel, electricity, pipe, and equipment have all increased in price significantly over the last 20 years. Labor costs are up as well. Regional droughts and water use regulations have added complex challenges.

The ramifications of declining revenue and increasing costs are sobering. In 2011, 157 golf courses closed (Golf Course Industry, 2012). Looking forward, either golf courses will close until supply meets demand or they must find ways to increase participation and/or decrease costs. "Maintenance Up the Middle" is positioned to address the latter.

Figure 1. Golfers focus on the middle when they play golf. Golf Course turfgrass managers would be well served to do the same when caring for the course.

Not all the news is bad, however. Golf is still enjoyed by millions of people every year. The quality of turfgrass on golf courses is at an all time high and the challenge of trying to hit a golf ball from the tee into the hole in as few strokes as possible remains as compelling as ever. Numerous national golf organizations are working together on initiatives such as Play Golf America, Tee It Forward, and others to grow participation in the game. When these initiatives are coupled with "Maintenance Up the Middle" to reduce costs and inputs that make the game more economically viable and conserve resources, everyone from golfers to golf course operators will benefit.

Defining "Maintenance Up the Middle"

In light of the statistics above, the need for a different strategy in golf course maintenance is apparent. "Maintenance Up the Middle" can reduce costs and inputs without changing the enjoyment and traditions of the game. Resource conservation including water is a byproduct of the strategy, but the overall goal remains providing a golf experience that is as good a value, if not better.

The reader should be familiar with a couple of terms. "Maintenance" refers to the way in which the golf course is cared for. It includes all inputs such as water, labor, fertilizer, pesticides, equipment, and fuel. The "Middle" refers to the areas of the golf course where the players want to be, specifically the tees, fairways, and putting greens. Management of the rough, which lies outside the "Middle," is an integral part of the strategy because of its vast size and large use of resources. Rough management will be emphasized further in the sections below.

The power of the strategy can be seen when one considers the distribution of playing areas on a golf course. A survey conducted by The Environmental Institute for Golf and published in a document called "Golf Course Environmental Profile" reported that an average 18–hole golf course has approximately 100 acres of maintained turfgrass. 36% of these maintained turf areas were found on tees, fairways, and putting greens. 58% of the maintained turfgrass was located in the rough and driving range (GCSAA, 2007).

These statistics provide massive implications. In many cases, the rough, or 58% of entire golf course receives substantial inputs in the way of water, fertilizer, herbicides, mowing, etc. If so, there is ample opportunity to reduce the intensity of maintenance without impacting the parts of the golf course where golfers want to be. When viewed through a "Maintenance Up the Middle" lens, the portion of the golf course that will be maintained to a high level just became much smaller. Further, the overall turf quality of the "Middle" is very good on most golf courses and should not require substantial additional resources. Simply reducing inputs in the outer areas will, by comparison, make the middle stand out and shine even more.

There are six questions or hurdles that "Maintenance Up the Middle" must overcome if it is to become effective.

Can it address water use?
Will it address current economic issues?
Does it make golf more enjoyable?
Will decision–makers adopt the concept?
How can be implemented?

Figure 2. "Maintenance Up the Middle" addresses economic issues by reducing inputs on golf course rough.

Question 1: Can it address water use?

Yes. 58% of the golf course is rough and the rough is an area where golfers do not want to be. Instead, they prefer to be on the more groomed and friendly areas such as the fairways and putting greens. If the expectation for turf quality in the rough is lower, inputs such as water can be reduced.

Question 2: Will it address current economic issues?

Yes. Inputs such as water, fertilizer, herbicides, and labor will be intentionally reduced under a "Maintenance up the Middle" strategy. In other words, 58% of the golf course can receive far fewer inputs. Imagine a scenario where the rough is only mowed six times per year and never watered or fertilized. Far fetched? Maybe, but there is every reason for plant breeders supported by industry to continue working to provide needed solutions.

Question 3: Does it make golf more enjoyable?

Another way to ask the question is, "Will golfers accept a lower quality and less visually appealing rough that requires fewer inputs? This is a big question and the success of "Maintenance Up the Middle" hinges substantially on the answer. As an observer of the game for many years, my inclination is that golfers will accept a lower input rough assuming that it does not play more difficult and does not slow down pace of play. Accompanied by excellent turf on tees, fairways, and putting greens, this strategy may become a popular trend and could become the new status quo. With that said, there are certain to be some comments from

golfers that do not like any change for any reason. This must be dealt with through an ongoing communication program.

Question 4: Will decision–makers adopt the concept?

Maybe, but there will be some requirements. First, decision–makers at the golf course must develop a mechanism to effectively communicate the change in strategy at their facility and why it is better for their customers in both the short and long–term. Second, they must be able to handle a few complaints and not assume a vocal few represent the majority of their customers. Also, it is likely that the most effective "Maintenance Up the Middle" program will involve an incremental approach in which golfers see small–scale changes and the staff is able to learn what works well and what doesn't. Finally, economic results must be measurable. It should be noted that one of the huge benefits of "Maintenance up the Middle" is not only an initial savings, but a savings that can be recouped every year.

Question 5: How can "Maintenance up the Middle" be implemented?

Effective implementation of "Maintenance Up the Middle" will require action at both the local level and the national level. The sections offer suggested steps that can be taken at both these levels. They are not all inclusive, but are included to encourage the advancement of this concept.

Implementing "Maintenance Up the Middle" at the Local Level

Initial Steps. The first step is for an individual golf course to determine what they are spending on each portion of the golf course. Generally, this information is not readily available because most golf course maintenance budgets are based on a line item format that groups expenses into different categories such as labor, fertilizer, pesticides, fuel, etc. Because of the desire to quantify input use and economic savings, it is a good idea to begin tracking both inputs and expenses according to the part of the course where they are allocated. Ask your local Green Section agronomist to conduct a review of your property and offer suggestions for starting. Communicate in advance what is going to occur on the golf course so that there are no surprises.

Minimal Approach. There are several steps almost any golf course can implement without too much difficulty. Reduce water and fertility by a predetermined percentage in the rough. The best approach is to increase the interval between irrigation events. Not only will this naturally reduce the number irrigation events, it increases the chance for a rainfall event to occur and further stretch the interval. Remember, it is likely that water cannot be applied only to the rough due to irrigation system design and any reduction could affect both fairways and tees.

Moderate Approach. Although there are extensive acres of rough on the golf course, not all the rough is the same from a golf perspective. For example, the rough around tee complexes is nonessential rough because golfers infrequently hit their golf balls into this area. One idea may be the use of plant growth regulators to reduce mowing frequency from once per week to monthly. Another idea is to install low growing and low/no input utility turfgrass around a tee complex. A good example of this type of turfgrass in the Southeast could be a bahiagrass and carpetgrass blend. Will this look different? Yes. Will it play differently? Not substantially. Both staff and golfers should observe the performance of these areas over time and expand as necessary.

Bold Approach. A bold approach would involve removing irrigation from the rough and expanding the installation of low or no input turfgrass or groundcover around tee complexes as described above. These areas can be evaluated and if successful, installed in the primary rough on the golf course. If these areas are expanded into the primary rough, significant modification of the irrigation system will be required.

Implementing "Maintenance Up the Middle" at the Local Level

National Initiatives. There are a number of national initiatives that will be extremely helpful in implementing "Maintenance Up the Middle". Promote the results of plant breeders who have worked to develop lower input grasses. Continue to financially support turfgrass breeders in discovering, developing, and testing turfgrasses or groundcover that persist under traffic with no irrigation and little or no fertility. Obviously, these needs and possibilities will vary greatly by region. Also, share success stories at golf courses of all levels and communicate proactively what an efficient golf course is to those that are just beginning or are likely to enter the game.

Conclusion

Although the economic challenges that golf courses have faced over the last six years have been difficult, it has opened up a new frontier for exploration in managing golf courses. The days of increasing budgets each year and raising the bar from fence line fence line are over for the foreseeable future. In its place is era where resource conservation, whether it be water, fuel, or fertilizer, is the expectation. While "Maintenance Up the Middle" is a process whose benefits will not be fully realized in a season or two, those who consistently apply these principles will be rewarded. We all have the opportunity to embrace resource conservation while working to make the game of golf just as enjoyable for those who play. Each of us within our own sphere of influence is invited adopt this concept and work to make it happen on a local level.

References:

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