

CASE STUDY



NEW YORK STATE BEST MANAGEMENT PRACTICES FOR GOLF COURSES

Integrating BMPs to Increase Sustainability



Project Details

Golf Course Profile:

- Location: Rochester, NY
- Annual rounds of golf: 22,000
- Staff: 6 year round, 18 in season
- Acreage: 150 acres
- Public or Private: Private

BMP Implementation:

Utilized a number of BMPs to achieve championship quality greens, including conversion of *Poa* greens to bentgrass; conservation of water through irrigation BMPs; reduction in nutrient inputs, and implementation of an IPM program.

Overview

Locust Hill Country Club (LHCC) is an 18-hole golf course and home to the LPGA Championship. Therefore, maintaining championship performance is important for the LHCC. The club is also committed to progressive environmental stewardship. Through years of experience and experimentation, the LHCC has worked to reduce inputs while providing conditions suitable for one of golf's premier events. The result has been an increase in efficiency and an overall reduction in inputs.

LHCC is able to ensure healthy turfgrass through integrating best management practices (BMPs) to address water use, nutrients, and pest management. The adaptation of these practices have provided quality playing conditions, advanced environmental protection and improved the bottom line. This effort is a key aspect of LHCC's transition toward more sustainable operations.



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Incorporating BMPs

LHCC decided to convert the turfgrass species from *Poa annua* to bentgrass. The transition began in 1995 when *Poa annua* comprised approximately 90% of the greens. After reviewing the course conditions and maintenance practices that were in place at the time, Rick Slattery, LHCC superintendent, recommended a transition using low input management practices to the board, believing that this would cultivate higher quality and more resilient turf that would ultimately require fewer inputs and provide a more predictable playing surface. He estimated that it would take about three years to make the transition and the turfgrass conditions would initially get worse before the transition was complete.

An aggressive overseeding program interjected varieties of bentgrass onto the course. Irrigation practices were modified to favor the bentgrass and cause the *Poa annua* to die out during periods of heat and water stress, including: discontinuing the automatic irrigation, incorporating hand watering, and establishing lower thresholds for soil water content. This process temporarily changed the appearance of the course until the new turfgrass was established. In addition to incorporating hand watering, the course was scouted every day.

Slattery believes that scouting the course carefully every day to develop thresholds for water and pests was vital to the transition. “We determined the thresholds to establish and maintain healthy turfgrass with the least amount of inputs. Also, we searched for ways to begin lowering those thresholds ever so slightly each year.”



Using less water is a key tenet of LHCC's low input management practices.



Hand watering conserved water.



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To conserve water and establish pest thresholds, the following practices were instituted:

- installation of a flow meter on the irrigation pumps in order to measure water use
- goal setting to reduce water usage annually
- reduction in irrigation run times
- initial reductions in small steps such as minute increments
- delay in using the automatic irrigation system a little longer each time that wilt shows up
- increased hand watering
- use of wetting agents
- irrigation system audits to review and identify opportunities for increased efficiency

Implementing an integrated pest management (IPM) program is also an important aspect to the course management at LHCC. As part of the IPM program, staff transitioned from preventative spray programs to problem solving practices. When a turfgrass disease became evident, Slattery says he asked himself “would I rather invest in fungicides as a short term fix or in seed which is a long term solution?” having learned that discovering the cause could provide an opportunity to correct the problem permanently.

During the first seven years, both water and pesticide use was reduced by 75 percent, resulting in a significant savings that was invested into seed and nutrients. Some of the practices they recommend for incorporating IPM include:

- determining what may have caused disease or weakened turf
- consider the amount of water and fertilizer used
- consider mechanical damage as the cause of the weakened turf, disease, etc.

The staff has found that proper nutrition is also important to transitioning away from *Poa* to long-term maintenance of healthy turf, striving to provide only the amount of nutrients necessary. The nutrient program includes returning grass clippings during mowing instead of collecting and hauling them away, which has helped to stabilize soil tests results while having the benefit of reducing the amount of supplemental nitrogen needed. Suggested BMPs include the use of soil tests, following university recommendations and routinely monitoring the turfgrass.



When pest problems do occur, identifying the underlying cause helps to determine a more permanent solution. In this case, cultural practices like solid tine aerification was used instead of pesticides to reduce disease pressure.



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Championship Quality Results

LHCC successfully utilizes BMPs while providing quality playing conditions for the LPGA. In 2010, the annual LPGA tour stop was elevated to the LPGA Championship. Basic requirements for a major championship include firm and fast surfaces that will remain consistent throughout tournament week. The course was kept drier than may be expected by some and irrigating only as needed to meet expectations. This allows the playing surface to be very receptive to rain events that may occur during the tournament week while still remaining firm for the competition. LHCC's success can be attributed to adherence to an annual overseeding program and BMPs. Says Slattery, "my experience has taught me that sustainability is more of a philosophy or a way of life than implementing a specific program. Take baby steps while nurturing a long range vision. Long range thinking must take the place of reacting with short term decisions." Low input management is not easy.