

## **Survey of Implemented Best Management Practices on New York State Golf Courses.**

### **Demographic Summary of Responses**

A survey of New York State golf courses was conducted in 2015 for six months and was promoted at large educational events, website banners, GCSA member email blasts, and social media. Of the 816 18-hole equivalent golf facilities in NYS 62 counties, 112 completed surveys were returned from 14 percent of NYS golf facilities (40 percent of the counties responded).

Similar to the formative assessment the low response rate is further skewed by 47 percent of total respondents from four counties in SE NYS Region. The next largest Central region returned 20 percent and Western NY 12 percent. The Northeast section of the state returned only three completed response. Therefore, this survey in combination with the formative assessment further emphasizes the need to work more effectively with Northeast NY GCSA.

The golf course superintendent at a facility completed 87 percent of the surveys. Superintendents completing the assessments averaged 14 years of experience, better than 75 percent college educated, 20 percent Certified GC Superintendent, and 51 percent class A GCSAA Member. So by every measure a majority of the respondents were highly qualified and educated professionals and in fact on a percentage basis more educated and certified than the formative assessment respondents. This would be consistent with the fact that primarily golf course superintendents currently manage implementing BMPs.

### **Key Results from Survey**

All of the respondents were implementing at least 75 percent of the BMPs surveyed. This could be expected based on the profile of the survey respondents currently managing golf facilities in NYS.

Greater than 90 percent of the golf course superintendents that responded to this survey have identified management zones and prioritized risk areas. Sixty percent of the respondents indicated the presence of water quality monitoring program, a two-fold greater number than is reported nationally. Clearly this is a progressive group of superintendents that want support for BMPs already in place.

Greater than 90 percent of the golf course superintendents that responded to this survey are using site specific irrigation systems that irrigate about 55 acres and use more than 4 metrics to decide how to irrigate including soil moisture, weather forecast, and turf appearance. However there appears to be a need for more irrigation system updates to improve efficiency.

Similar to the formative assessment, golf course facilities where pesticides and fertilizers are stored require most attention for awareness and implementation. Overall, similar to the national surveys on these items, equipment washing stations and pesticide mixing loading areas will require additional educational resources.

Most respondents are managing over 30 year old mixed stands of creeping bentgrass and annul bluegrass. Cultural practices across the board are very much aligned with BMPs, especially on golf courses that reflect this profile. There is

widespread implementation of organic matter management programs and more than 85 percent of the courses have not lost turf density on more than 20 percent of the course. This is strong indication of sound maintenance programs that maximize infiltration and minimize off-site movement of inputs.

Nutrient management is guided primarily by soil testing programs and more than 60 percent of the facilities use eight or more factors to determine nutrient needs. Sixty percent calibrate application equipment each time it is used and more than 70 percent apply less than 0.5 lb N per application to sand-based putting surfaces. More information on soil test interpretation research is warranted.

In contrast to the significant misunderstanding of IPM from the formative assessment, the implementation of IPM appears to be aligned with BMPs. Greater than 90 percent of respondents use three or more factors when deciding to apply and three or more factors when selecting a pesticide to apply, with only 40 percent using a specific risk assessment model. Continuing education should be conducted on progressive IPM programs and encouragement of more written plans.

### **Moving Forward**

Based on the results of this survey, a statewide educational plan focused on implementing environmental stewardship practices such as BMPs would emphasize pesticide and fertilizer storage and handling as well equipment-washing areas. A plan would also include education regarding optimizing irrigation systems and interesting soil nutrient tests. Specific educational efforts should be discussed with Northeast Region of GCSA to improve involvement with this important industry-wide initiative.