



Chuck Anfield, CGCS Heritage Bluffs Golf Course

The MAGCS Members met for the April Meeting at Silver Lake Country Club in Orland Park for a day of education and golf. MAGCS President, Dave Kohley, his Staff and the Coghills were the hosts for the day.

Dr. Ed Nangle, CDGA Director of Turfgrass Programs (who has been super busy making calls to courses) made a presentation entitled "A Winter of Epic Proportions, December 2013 to March 2014". "Based on historical weather data, this is probably the worst winter you will ever see. The next nearest winter like this was in 1903! This winter there were no geographic areas of damage, it doesn't make sense. It's not your fault. It was just one of those winters."

The winter got off to an early start in November. It was 5 degrees below average. The golf season didn't finish with a warm trend. That being said, it provided a good hardening off period for the turf before the deep freeze set in. Everyone had time to get their snow mold applications down. Everyone had to time to blow out their irrigation systems. So far, so good.

In December, the snow fall was not heavy, at first. Then January and February rolled in with a fury. The snowfall was 33" at the Golf House. This is 22" over the normal amount! The



Dr. Ed Nangle addresses the group at Silver Lake Country Club at the April Meeting.

temperature for the same time period was on average 10 degrees below normal.

The big oh-oh, or trigger moment came in mid-January when weather conditions warmed and the snow melted. Soil temperatures climbed to 45 degrees. The *Poa annua* re-hydrated and then it re-froze. Another melt and re-freeze occurred in mid-February that further thickened the ice and sealed the turf in and created lethal, anaerobic conditions. Further damage was related to ice damming occurring on green fronts and in low lying fairway and tee areas. Some turf was documented at being under the ice cover for 85 days. Some turfgrass death can occur in as little as 45 days under ice cover. The ice thickness showed variability, depending on sun exposure. Sites in the shade had thicker ice cover and were more likely to sustain turf loss.

The maximum low was -23 degrees at the Golf House. Temperature stayed below freezing from January 26 to February 18. For the record, *Poa annua* is susceptible to death or damage at 24.8 degrees. Bentgrass is tolerant to -20 degrees.

What Happened.

The turf demonstrated a predictable physiological response. The response is change in cell wall composition and a change in intracellular chemistry.

So how do we prepare? Do we back off on fall core aeration? Do we top-dress less or do we completely cover crown with sand? Do we increase our mowing heights prior to dormancy? Do we use protective covers on all of our greens? Do we shovel snow off the greens every time it snows?

Based on early survey data, 65% of the CDGA courses suffered some kind of damage to greens. "Some of the fairways and greens in March looked like zebras going to a safari."



There were patterns of survival. Ice removal seemed to benefit certain greens. The disease pressure was unexpectedly very low, even in untreated areas. Most plant protectant programs worked well.

Recovery Steps

Permeable covers are effective in maintaining higher soil temperatures in newly seeded areas. The light heats the cover and can increase soil temperatures by 3-5 degrees. It doesn't sound like much, but every little bit helps. They also offer a greater consistency of temperature range within the soil profile. They will need to be put on and taken off daily. Ensure protective measures are taken for disease control. Air and water movement are also very important on newly seeded areas.

Right now we need warmth, sufficient soil moisture in the top two inches and fertility for the newly seeded areas. Try to use more tolerant bentgrass varieties when seeding. Make sure you get good soil to seed contact. Remove sand dam lips in front of greens that form from repeated topdressing. Tree lines that shade turf and predispose turf to be weak should be evaluated for removal or pruning options. Keep covers on as long as possible. Pigments have shown to be effective at raising canopy temperatures.

Communication Moving Forward

A letter was sent to all of the Member Clubs describing climate and impacts. Monthly scouting reports are being sent out. Dr. Nangle is available for site visits.

All that being said, it was a record winter. Ice was the biggest issue. Use this opportunity to re-grass with bentgrass. "Nothing worked consistently, don't beat yourself up. Survival results were very mixed but the take away message is if you had bentgrass, you had a better chance of survival than if you had Poa annua."

Results from the survey that MAGCS members participated in and was the basis for this Dr. Nangle's talk can be found on page 4. @



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