Perennial ryegrass and bentgrass bore the brunt of the winterkill
April 9, 2014

We’re starting to see the extent of the winterkill damage with the warmer spring weather. Many golf courses have been irrigating to stimulate regrowth, assess the extent of the winterkill, and prevent further injury. As we suspected, winter desiccation likely caused the majority of the damage around the state. Exposed and elevated areas have significant desiccation scars (Figure 1). Damage is most severe on golf course tees and fairway while most high mowed turf and putting greens seem to have survived the winter. Perennial ryegrass fairways also sustained a significant amount of damage (Figure 2). Herbicide applications to control annual bluegrass last fall may have increased the susceptibility to winter desiccation.

Thatch appears to be a major contributing factor to this year’s winterkill event (Figure 3 & 4). Tees are pushed with nitrogen to recover from concentrated foot traffic and divots. This can lead to an accumulation of thatch, especially around tee corners, that left grass crowns exposed and unprotected from the relentless winds this past winter. The thatchy L-93 green at our turfgrass research center is completely dead. We’re using this opportunity to do aggressive cultivation and reseed the entire surface. While creeping bentgrass has excellent cold and ice tolerance, it appears that bentgrass crowns are susceptible to desiccation injury during the winter. Frequently topdressed and cultivated bentgrass greens fared much better this winter. Greens covers also helped prevent desiccation on most greens, but north facing and elevated areas still received some injury even under the covers (Figure 5).

Many golf course superintendents have begun to reseed damaged areas. We have provided several resources on our website to help speed recovery: http://turf.unl.edu. Use this opportunity to reduce thatch and incorporate new grass varieties. There is also a new extension bulletin designed to explain winterkill to golfers located in the winterkill section of our website. Please use and share these resources and feel free to contact us for more information or to schedule a visit of your site.

Bill Kreuser, Assistant Professor, Turfgrass Extension Specialist, wkreuser2@unl.edu
Zac Reicher, Professor, Turfgrass Science, zreicher2@unl.edu

Figure 1. Elevated areas like these fairway mounds had significant amounts of winter desiccation injury. Fairways and tees exposed to north and west winds also have widespread damage.
Figure 2. The creeping bentgrass green in the foreground is slowly recovering while the perennial ryegrass fairway in the background is dead from desiccation and cold temperatures. Works pick up stones brought up during seeding.

Figure 3. Creeping bentgrass tees and fairways with a significant thatch layer were hard hit with desiccation. The green triplex ring survived on this tee because it had less thatch and buried crowns.
Figure 4. Bentgrass crowns are less protected from exposure in areas with significant thatch layers. Proper cultivation and thatch management is important for desiccation protection in summer and winter.

Figure 5. Greens covers helped protect against winter desiccation. However, exposed areas such as this northwest facing slope incurred winterkill damage.