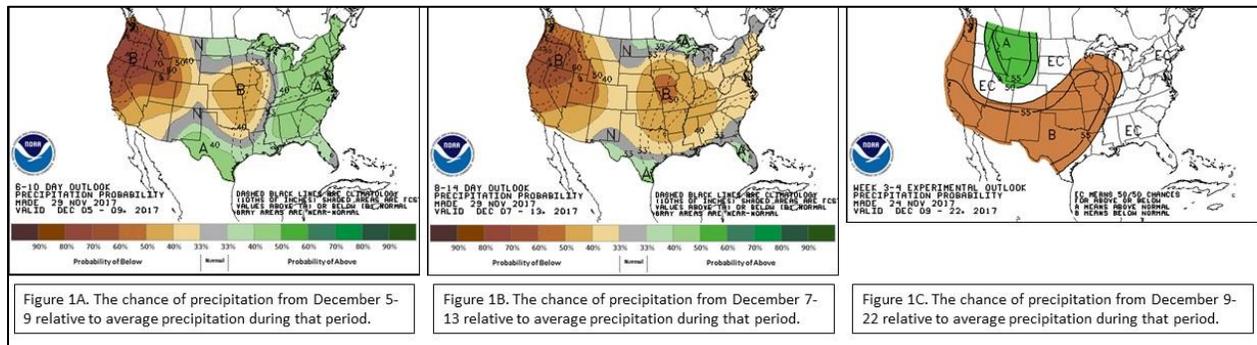


**Winter desiccation update
November 30, 2017**

It continues to be dry, windy, and warm across much of the Great Plains. Since early October, Lincoln has received less than 0.10” of rain. A similar situation is playing out across much of the state. While the weather forecast models indicate a major cool down is expected in early December, the medium and longer-range forecasts suggest the dry conditions will persist. The climate prediction center graphic indicate there is a 40-55% chance of drier than normal weather across Nebraska this December (Fig. 1).



I’ve received many phone calls, emails, and direct messages about the state of our turf going into winter. A Twitter poll from this week indicates that two-thirds of professional turf managers in the Great Plains have started or are considering irrigation right now. For many, that means re-charging irrigation systems or hand-watering with a tank or sprayer.

Where is the turf right now?

During fall, the crowns start to dehydrate. Light drought stress in October is fine because it helps this process. The leaves will be cut off, die and become bleached tan by the sun. We assess cold-hardiness by measuring the amount of water in the crowns. During the summer, the crowns are 80-85% water by weight and lack substantial cold tolerance. After fall cold-acclimation, crown moisture values typically range from 50 to 60% water by weight. This dramatically increases cold tolerance.

Bill Kreuser
@UNLturf

At our East Campus Turf Plots, we've received 0.07" of rain over the last 45 days. This forecast looks to stay very dry across Nebraska. If you're in the Great Plains, are you considering recharging on this 70+F day?

- 15% Yes, I'm firing it up
- 37% Concerned but waiting
- 35% Nope, it will be fine
- 13% Using the frost-free line

84 votes • Final results

3:39 PM - 27 Nov 2017

During open winters, grass species like creeping bentgrass, annual bluegrass, and perennial ryegrass can suffer from desiccation stress. This causes crown moisture values to drop below 50%. The lower the value, the greater the risk of plant death when temperatures drop well below freezing. The risk is greatest for golf and sports turf growing on sand soils. Stands with lots of thatch are more likely to have issues with winter desiccation (tees and fairways). **Lawns of predominately Kentucky bluegrass, fescues, or buffalograss are much more tolerant of winter desiccation stress.**

We sampled several creeping bentgrass stands this week to assess crown moisture and cold-hardiness. Samples came from greens and a sand-capped fairway in Lincoln. For the most part, the samples had a low risk of desiccation. Some of the samples actually had more water than would be desired (likely from the warm weather the past couple weeks). The current weather going into the cool-down next week, should help to further reduce the crown moisture of those samples. Soil moisture values are currently at or below the summer wilt points, but that doesn't seem to be having a negative effect on the crown moisture level. Perhaps the 15th green at a local golf course could benefit from some light irrigation. Remember, summer wilt points aren't the same as the winter wilt-points because the turf isn't using as much water.

Location Description	Rep	Crown Moisture	Risk of Desiccation†	TDR Reading (% vwc)	Average TDR Wilt Point
East Campus - 100% sand green	1	67%	Low	6.1	4-6%
	2	76%	Low		
East Campus - Sand-capped bentgrass fairway	1	65%	Low	14	12-14%
	2	57%	Low		
East Campus - 15% peat amended putting green	1	54%	Low	8.2	6-8%
	2	42%	Medium		
Lincoln golf course - Putting Green #15	1	55%	Medium	5.1	12-15%
	2	31%	High		
Lincoln golf course - Putting Green #17	1	69%	Low	6.6	12-15%
	2	61%	Low		
Lincoln golf course - Putting Green #1	1	70%	Low	11	12-15%
	2	64%	Low		

† Desiccation risk levels were determined from the MS research of Darrell Michael (2016) on creeping bentgrass greens and fairways.

What should we be doing now?

The best way to prevent desiccation is to insure the crowns of those sensitive species are covered. This can be with a heavy application of topdressing or a cover. Darrell Michael's MS research (2016) shows that crown moisture changes are most likely to occur in late winter and early spring. Spray-based products had a very limited effect on desiccation tolerance.

Light irrigation can be helpful if soil moisture is well-below wilt points, especial on sandy soils. Be careful not to pool up water, especially with perennial ryegrass and annual bluegrass. Those grasses can rehydrate when it is abnormally warm like this. The goal in winter watering is to add moisture for the crown. The leaves are going to die this winter and are not the target of the winter irrigation. A wetting agent can also be helpful on sand soils prior to winter.

Try to limit traffic. The warm weather has extended the season, but the extra traffic can place a significant amount of stress on the turf plants. Most people would understand not trafficking drought stricken grass in the summer, but they have no issue doing it during winter drought stress. Both are damaging and should be avoided to promote plant health and recovery.

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