



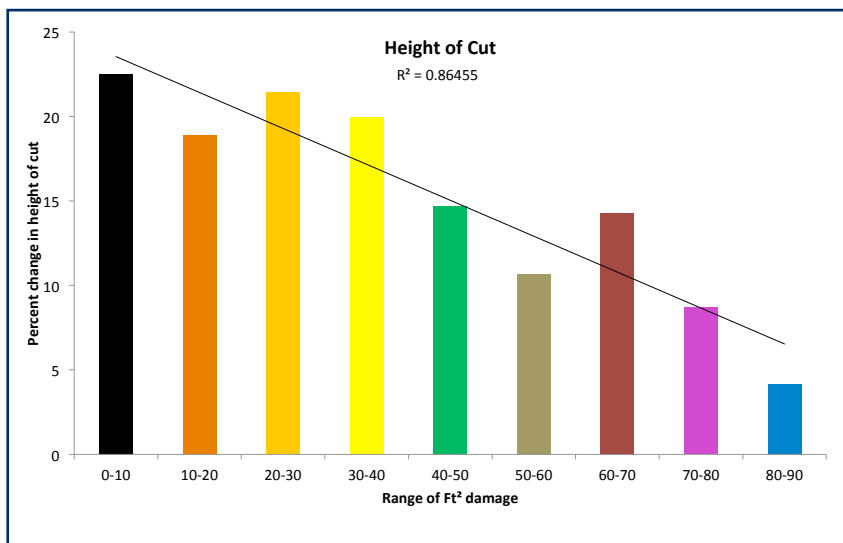
The Joys of Winter and the Heartbreak of Summer

Dr. Ed Nangle, Chicago District Golf Association

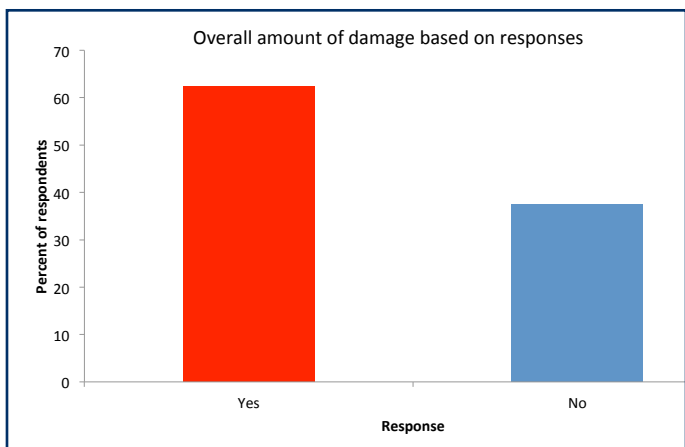
The CDGA and the Midwest conducted a survey of the membership this spring. Dr. Nangle took the time to present the findings at the April Meeting at Silver Lake Country Club (see Education Wrap Up). He also took the time to delve deeper into the data and presents correlations here. He shares his findings here.

As time has passed and still many of us are somewhat frustrated as to how things could so dramatically wrong over the winter, the survey which you participated in has produced some interesting results. I for one would like to thank you for your inputs and hopefully we can further place useable information in your hands In regards to overall responses, a majority of almost 2:1 respondents indicated that you suffered some damage to your putting greens (Overall response figure). If we add in tees and fairways I would expect that the percentage of courses that saw damage would get close to 80%. Reports of older cultivars of ryegrass also suffering badly from the winter have surfaced which only added to the total amount of courses impacted. For the most part of the courses who didn't suffer damage were lucky enough to have relatively pure stands of creeping bentgrass.

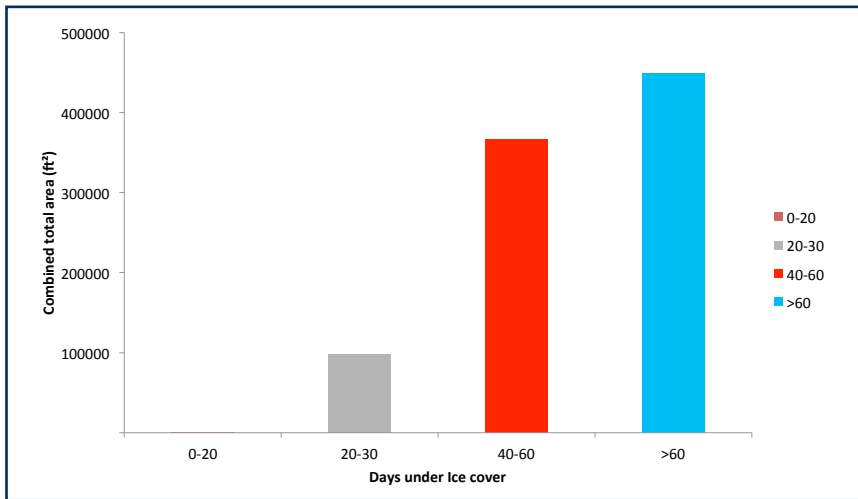
As I went through the data one point that rose its head related



to mowing heights. Based on the data received and transformed to indicate the percent change in mowing height (Increase) the smaller the amount of total area damaged. The relationship is far from perfect; however the idea that carbohydrate reserves are extremely important would be strengthened in the fall when you have greater leaf surface to aid in light capture going into winter. The R2 value which can point to a POSSIBLE relationship was relatively strong – especially for a biological situation which was subject to such extreme conditions (Height of cut figure).



Without doubt the longer the period we were under ice, the greater the damage was. While 60 days is traditionally considered the maximum timescale for sustaining *Poa annua* under ice, there was still damage found even under shorter time periods. The variability in *poa* biotypes may lead to some of the differences, while microclimate effects undoubtedly both hindered and helped *poa*. Despite the graph indicating timescale damage, not all courses suffered from the problem and one course with high



concentrations of poa who did nothing whatsoever, suffered almost no damage (Days under ice).

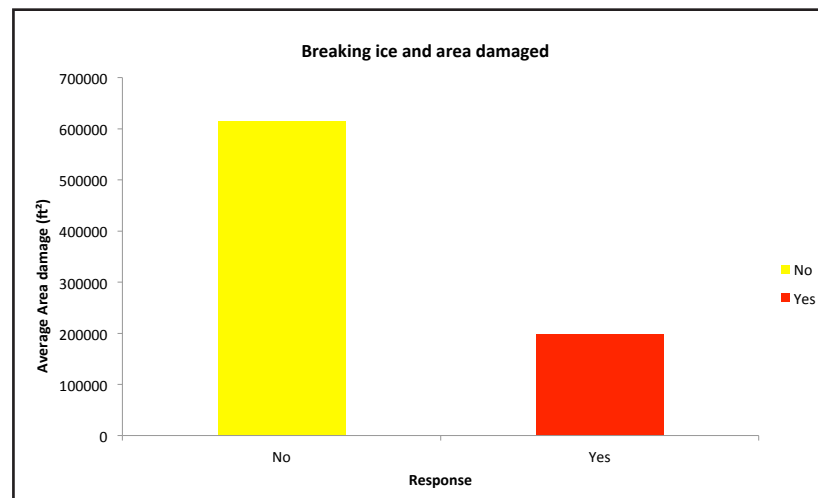
There was some concern that breaking the ice early created a problem and this does not seem to be the overall case. A vast majority of the damage by area as we can see according to survey responses was found at courses that did not break ice. Yet again however there are incidences of breaking ice early either did not help or even early efforts were fruitless as superintendents found that greens were already in bad shape despite the aggressive approach (Breaking ice).

Of the controversial sentiments there are of course two that will raise their head. I could not clearly see a relationship between fertility and the problems that arose. There were some refinements that would need to be put to the quiz and more specific answers based on the data we received. It does seem that applications of urea as a dormant feed may not be ideal – but it is also easy to say that a majority of responses were also from managers who used urea and so the probability of damage occurring was greater – the joys of statistics! The question needs to be revisited, I will add one caveat however, if a quick release source of N is available and poa is regaining activity within 24 hours of exiting freezing conditions then uptake and activity will certainly be pushed to a greater extent by the availability of a quick release portion of a fertilizer – remember despite being coated there is still some quick release of N (Fertility).

Finally the other question that always leads to debate is related to covers. It's a very difficult topic to deal with as there is so many

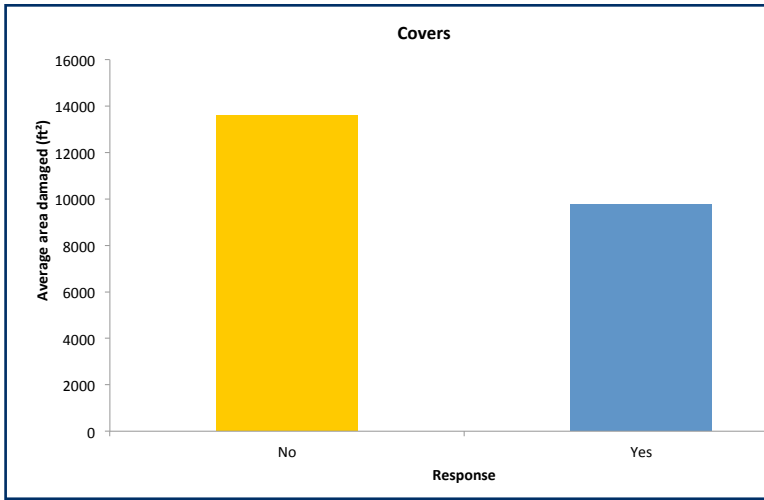
pros and cons for both. Its undeniable that covers will help recovery in the spring but how consistent they are over winter is unfortunately debatable, from a financial and labor standpoint it may not be feasible, while cover type and how to handle mid winter thaw's is also another concern. Further north, covers are a regular feature and so some credence must be given to their use – consistency is the key however. Our survey indicated that covers reduced damage by as much as 30% - now I know there are situations who will tell me I am wrong and that the covers made things worse – don't shoot the messenger – reasons for cover failure may be penetration of water underneath during the thaw period, too much warming under the covers in the thaw period leading to really actively growing Poa annua. They do protect from wind damage of course and may help in certain situations – but as I say – someone for sure is going to tell me I'm wrong on that (Covers)

Overall, the winter was a record one – the NOAA indicated that it broke all time average cold temperature from December

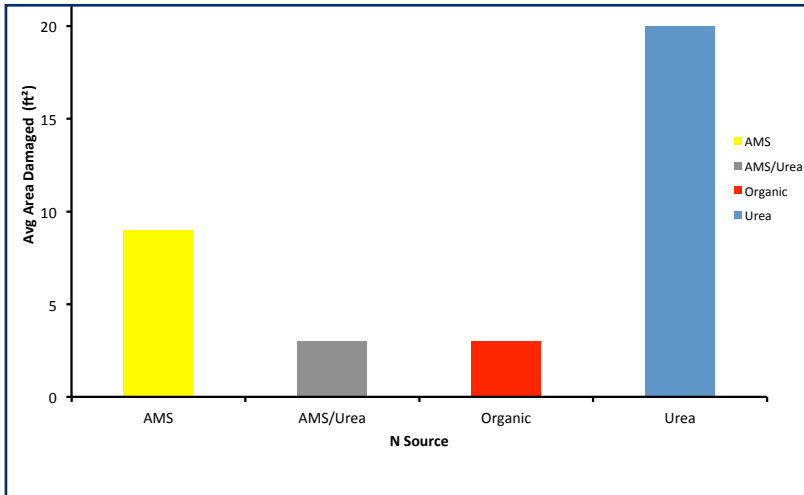


to March. Snowfall was top three in total and the swath of damage ran from Chicago through Detroit and all the way over to Massachusetts – similar to a line that storms would follow with the westerly winds. For the most part the timeline of problems seems to begin in January with ice formation events. This ice was further thickened with melt occurring on two or three sets of warming dates and the damage was then done under the heavy





snow pack. Empathy is starting to give way to frustration but unless courses are willing to go to bentgrass there is no surefire response to this occurring again. It's nice to call it a 100-year winter – let's hope next year isn't a 1000-year winter. ☹



A Blast from the Past

I searched *The Bull Sheet* from 1978-79 (the second coldest most snowiest winter on record) to see how it effected the turf at area courses. Snow mold was the most devastating factor (other than several collapsed roofs of maintenance facilities). "Some buildings were a total loss; others the roofs collapsed and had to be replaced. Some equipment stored in these buildings was ruined and had to be replaced or repaired at a high cost. It appeared that the golf carts stored in these buildings suffered the most damage." – Ray Greber

Malcom Shurtleff and John Street from U of I wrote an extensive article that appeared in the June edition of the Bull Sheet that year and then was reprinted in October.

Even then, superintendents couldn't sit still and wait. Bob Breen, Sr. in February of that year explained, "Today I took a shovel, scooped three feet of snow off a green and removed a couple of plugs and brought them inside to look at. The first impression was that it looked as if it been removed in later April as it had good color, green seed heads of *Poa* had formed, and it was very much in the need of a mowing." He went on to say, "There were several lesions of leaf spots and *Typhula* and Gray snow mold was evident in both plugs. I would seem to indicate rather severe snow mold problems."

I did notice the CDGA Green Seminar had a section added to the agenda dealing with winter damage that year. In speaking with one of those present at that meeting – snow mold was the culprit that spring. There was no ice damage or desiccation with all that snow cover. Frost never formed in the ground that year, unlike 2013-14 - and if you were mowing below ¼" going into winter, you were asking for trouble. – L. Cella

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