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Golf Course Closings and Frost Delays on Putting Greens

James B Beard

Closing a golf course is one of the most difficult and emotional questions faced by the golf course staff. It adversely affects cash flow in all departments and may create dissension among the golfing clientele.

A primary reason for closing a golf course is adverse weather conditions. Many factors influence the decision. Since most of these factors call for personal judgment, the decision is frequently disputed. This is especially true if the reasons are not clearly understood. Even though judgment is involved, **the decision should be based on all available facts, with the best long-term interests of the entire golfing clientele and the golf course condition being the primary governing factors.**

The final decision is the responsibility of either the green committee chair, who has direct responsibility to the membership for maintenance of the course, or the owner or designated authority, in the case of privately owned clubs. The decision is strongly influenced by and usually solely dependent on the judgment of the golf course superintendent. The properly trained, experienced golf course superintendent is capable of rendering expert professional advice on the subject and has the capability to recognize the myriad factors that influence the future well-being of a turf and its playability that are not recognized or understood by golfers. Thus, **as a practical solution, the decision-making responsibility usually is delegated to the golf course superintendent.**

Traffic Stresses. There are two main detrimental effects that result from traffic stress on golf course turf: (a) **soil compaction**, the extent of which is determined by the pressure per unit area exerted on the soil, and (b) **turfgrass wear stress** from abrasive action on grass shoots.

Bare feet are particularly destructive to putting greens in terms of soil compaction, as are both boots and shoes with small heels. This is because the body weight is exerted on a relatively small turfed surface area. Also, body weight that is distributed largely on the spike shoulders of regular golf shoes causes more damage than is the case of golf shoes with recessed spike shoulders or spikeless golf shoes with modest knobs.

Hand-pulled and electric hand golf carts exert more pounds of pressure per square inch than do most riding 3- or 4-wheel powered golf carts. For this reason, **hand-pulled carts should be under the same operating restrictions as are powered golf carts.** The abrasive action of powered golf cart tires in turning, starting, and stopping makes these carts more likely to injure a turf than is the case for hand-pulled carts, especially on fairways. However, hand-pulled carts are more often found in inappropriate areas.

Adverse Weather Conditions. Weather has adverse effects on both the turfgrass and the underlying soil. Such effects are further aggravated by traffic over wet areas. The

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...Frost Delays...

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effect of traffic on soil compaction increases as the soil water content increases. At water saturation the soil becomes extremely pliable and prone to serious rutting. Puddles need not be present for the soil to be water saturated and compaction prone. Serious problems arising from soil compaction include (a) exclusion of oxygen needed to maintain root growth, (b) loss of water absorption and retention capabilities in the soil, (c) increased water loss by surface runoff, (d) loss of resilience, which affects the ability to hold a shot on a green, (e) destruction of surface smoothness, which may require weeks or even months to fully correct, (f) a wet surface and weakened turf that is more prone to disease, annual bluegrass (*Poa annua*) invasion, insect injury, and such environmental stresses as cold and heat, and (g) increased labor costs for corrective procedures, such as turf cultivation, topdressing, spiking, and overseeding.


The degree of soil compaction caused by traffic under wet conditions varies with the soil texture and drainage characteristics. Problems with soil compaction and rutting are more serious on fine-textured clayey soils and on areas where adequate drain lines and surface drainage have not been provided. In contrast, many sandy soils drain rapidly and traffic can be reintroduced sooner after an intense rain. Thus, it is possible for one golf course to be closed due to wet conditions while another nearby course is open, simply because of differences in soil texture and drainage characteristics.

Winter Play. Turfgrass damage from traffic stress may occur when there is frost on the ground, especially on putting greens. **Traffic pressure exerted on frozen leaves physically disrupts the tissues by mechanically fracturing the cells and causing death.** This damage occurs at a time of year when turfgrass recovery is unlikely, thus the detrimental effects are cumulative if such traffic stress is allowed to reoccur during the winter. **Frost can be removed relatively quickly by a light syringing if the temperature of the air and underlying soil profile are above freez-**

ing. In most cases, it is preferable simply to close the golf course until the normal diurnal rise in temperature has melted both the surface frost and the frozen turfgrass shoots.

Play on putting greens when the turf-soil is solidly frozen causes less permanent damage if the grass is dormant and the greens remain frozen all day. However, the turf on greens may not stay frozen all day once play is allowed. **Should daytime surface thawing of the turf occur, golfer foot traffic may cause the turfgrass roots to be sheared at the interface between the lower frozen soil and the soft thawing sod.** This is a second winter condition that justifies closing the course, but it is one that is difficult for golfers to understand. For this reason, it may be better to keep the golf course closed for the day, if daytime thawing is anticipated.

One of the most critical times to close putting greens in colder climates is when the frost is melting in the soil profile. During this 1- to 2-week thaw period, foot traffic has been known to sink in up to 6 inches (150 mm) on very soft clayey greens. **As a general rule, cart traffic is best confined to cart paths during the winter, during spring thaws, and when spring transition occurs on dormant bermudagrass and zoysiagrass fairways.**


The Decision. The goal of good golf course maintenance is to have the golf course open and in optimal playing condition at all feasible times. Any decision that necessitates closing the course should be made carefully, using sound reasoning, and must take into consideration the good of the majority. The potential damage—both immediate and long term—of allowing play must be weighed very carefully against monetary losses and golfer dissatisfaction if play is prohibited. Unfortunately, the decision may not be easy to make and may involve a compromise, such as allowing foot traffic only or restricting golf carts to paths. The golf course superintendent's judgment, based on sound agronomic knowledge and experience, is vital in the decision-making process, especially when closure is contemplated due to unfavorable weather conditions. 

...Skunks and Raccoons...

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are unlikely to release scent if kept in the darkened trap and handled in this manner. Trapped skunks can be drowned by submerging the covered trap in water for at least five minutes. Because of the potential for spreading rabies, trapped skunks should not be released elsewhere.

Be extremely careful if handling raccoons, and especially skunks, because of the possibility that they are rabid. Be especially wary of animals that look sick, wander around in daylight, or show no fear of humans—there is a good chance that they are rabid. If you are bitten, cleanse

the wound with warm soapy water and seek medical care immediately. Try to capture or cage the animal, but don't shoot it in the head because the health department will need the head to determine if the animal was rabid. 

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