

Severe weather and lightning safety: What you don't know may shock you!



Weather is a critical component of a turf manager's daily responsibilities. When the weather is behaving, life is easy, when it doesn't, life can become very troubling, even dangerous.

Each year many people are killed or seriously injured by thunderstorms despite advanced warning. The following information is intended to help turf managers become more aware of the potential hazards associated with severe weather and to provide some guidelines for making storm-related safety decisions.

WHAT ABOUT THUNDERSTORMS?

Thunderstorms are relatively small in size averaging 15 miles or less in diameter, can form in minutes and last on average from 30 minutes to several hours. Despite their small size ALL thunderstorms are dangerous. On average, the United States experiences about 100,000 thunderstorms each year and 10% are classified as severe (1-inch hail, winds greater than 58 mph, or a tornado). Thunderstorms produce many hazards; we'll review three that can affect sports turf managers.

FLASH FLOODS AND FLOODS

- The #1 cause of deaths associated with thunderstorms.
- Most fatalities occur at night from victims who become trapped in automobiles.

- Six inches of fast-moving water can knock you off your feet; a depth of two feet will cause most vehicles to float.

Know the location of your facilities, its potential for flooding and the challenges associated with pedestrians and vehicles on your facility. Bottlenecks often occur when parents are dropping off and/or picking up athletes for regular events. Consider the increased traffic congestion with everyone moving in a panicked frame of mind.

TORNADOES

- 3rd most deadly hazard; can occur at any time of the year and in any state.
- In southern states, peak tornado occurrence is March through May, while northern states are during April through June.
- Tornadoes are most likely to occur between 3 and 9 p.m. but can occur at any time.

The best thing to do is to put as many walls as possible between you and the outside. A reinforced building can provide good shelter, but a basement provides a more substantial 'wall' for your protection.

Be sure to consider what it will take to move a large number of people into reinforced buildings in a relatively short period of time. Fortunately, lead-time warnings for tornadoes have improved and locating tornadic thunderstorms are a little more predictable than our next hazard, lightning.

LIGHTNING

Lightning is arguably the most dangerous severe weather hazard for sports turf managers. Lightning is the discharge of electrical energy built-up between positively and negatively charged areas. These discharges can move from cloud to cloud, cloud to ground or from ground to cloud.

- Lightning is the second most deadly thunderstorm hazard and the least predictable.
- Most lightning fatalities



**Lightning is a
random, chaotic and
dangerous fact of nature**



“When thunder roars, go indoors.”

and injuries occur in the summer months during the afternoon and evening.

- Lightning can strike 10 miles in advance or behind a travelling thunderstorm.
- Each spark of lightning can generate 100 million volts and 50,000° Fahrenheit temperatures.
- You CAN survive a lightning strike
- Lightning occurs in ALL thunderstorms.

One hundred percent of all lightning deaths in 2009 were of people caught outside. One out of five people were engaged in a sporting activity, while another one-fifth were killed seeking shelter during the thunderstorm. The National Weather Service recommends: **“When Thunder Roars, Go Indoors.”**

It is also important to obey the **30/30 Rule**: Go indoors if, after seeing lightning you cannot count to 30 before hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.

This is an important rule to remember because gauging the distance of lightning can be misleading. At night, lightning is easy to see and can be spotted 50 to 100 miles away depending on conditions. During the day it is harder to spot initially and may be less than 5 miles away.

BEING PREPARED FOR SEVERE WEATHER

Being prepared means having a severe weather safety plan (see sidebar). The National Lightning Safety Institute (NLSI) has produced a framework for dealing with athletic event safety.

Once a plan is in place it is crucial that drills be conducted to ensure its success. Double-check that there is ample space for all people considered and that distances to the safety facilities match warning and evacuation lead times. Proper training and clearly defined procedures will help ensure success whenever severe weather threatens.

SOURCES FOR SEVERE WEATHER SAFETY INFORMATION:

National Lightning Safety Institute, www.lightningsafety.com includes Decision Tree for Personal Lightning Safety, Lightning Safety for Organized Athletic Events, and NCAA Sports Medicine Handbook Lightning Safety Guideline.

NOAA: National Weather Service - www.nws.noaa.gov/om/severeweather

NOAA: Storm Prediction Center - www.spc.noaa.gov/ ■

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Lightning safety for organized outdoor athletic events

Education is the single most important means to achieve lightning safety. A lightning safety program should be implemented at every facility. The following steps are suggested:

1. A responsible person should be designated to monitor weather conditions. NOAA Weather Radio, or local TV and radio weather forecasts - should be monitored 24 hours prior to events. An inexpensive portable ALERT weather radio is recommended for obtaining timely storm data.

2. Suspension and resumption of athletic activities should be planned in advance. Understanding of SAFE shelters is essential. SAFE evacuation sites include fully enclosed metal vehicles with windows up; substantial buildings with pipe-in plumbing; and low

ground. Seek cover in clumps of bushes not trees.

3. UNSAFE SHELTER AREAS include all buildings without plumbing, outdoor metal objects like flag poles, fences and gates, high mast light poles, metal bleachers, golf cars, machinery, etc. AVOID trees. AVOID water. AVOID open fields. AVOID the high ground. AVOID dugouts (they are connected to metal objects!)

4. Lightning's distance from you is easy to calculate: if you hear thunder, it and the associated lightning are within auditory range... about 6-8 miles or less away. Ask yourself why you should NOT go to shelter immediately. Of course, different distances to shelter will determine different times to suspend activities.

A good lightning safety motto is:

"If you can see it (lightning) flee it; if you can hear it (thunder), clear it."

5. If you feel your hair standing on end, and/or hear "crackling noises" you are in lightning's electric field. If caught outside during close-in lightning, immediately remove metal objects (including baseball cap), place your feet together, duck your head, and crouch down low in baseball catcher's stance with hands on knees.

6. Wait a minimum of 30 minutes from the last observed lightning or thunder before resuming activities.

7. People who have been struck by lightning do not carry an electrical charge and are safe to handle. Apply first aid immediately (CPR) if you are qualified to do so. Get emergency help promptly. ■

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