

Large Venue Outdoor Events and Associated Lightning Risk

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Large venue events present inherent risks, both natural and man-made, for spectators and players alike. Lightning frequency and location is one of the most difficult hazards to forecast. In particular, lightning claims the lives of approximately 54 people in the United States every year. 45% of these lightning fatalities occur in open areas such as sports fields [1]. While some fatalities may occur in small isolated fields or stadiums, a lightning strike during an event at a large venue could be devastating on a much grander scale. College football stadiums, outdoor concerts, and NASCAR events comprise some of the most popular large venues in the Mid-South and Southeast, which are also areas prone to high numbers of lightning strikes [2]. In August of 2011 five individuals were killed when a stage collapsed at a Sugarland concert in Indiana. Officials commented that they were monitoring the weather and anticipated a storm around 9:15pm. However, the storm hit around 9:00pm and that the significant gust of wind struck the stage before an evacuation plan could be activated.

The NCAA has universal procedures in place to address the risk of lightning strikes near college football stadiums in the United States during game time. These procedures are the same regardless of the schools' geographic location. Each institution is responsible for tracking local storms and monitoring lightning strikes. The rules for what must be done when lightning is detected within a certain distance of the stadium are as follows: when lightning strikes within 15 miles (24.12

km) of a stadium, on-field officials should be notified; when lightning strikes within 10 miles (16.09 km) of the stadium, officials must use the public address system to notify attendees of the weather situation and suggest they evacuate for a safer environment; when lightning strikes within six miles (9.66 km) of the stadium, the game will be postponed until the time when no lightning has been detected within six miles for at least 30 minutes [3]. However, no published lightning safety related procedures for could be found for other large venue outdoor events.

What role can a Geoscientists play in the evaluation of risk. Currently a study is underway looking specifically at the probability of lighting at NCAA stadiums in the Southeast in order to determine if the NCAA policies in-place are sufficient for the safety of players, officials, and spectators. Geoscientists, specifically GIS specialists can all evaluate outdoor venues stadiums and determine the most efficient manner in which evacuations should occur. Most importantly Geoscientists can work to educate both officials/management and spectators to the related risks and mitigation steps/safety protocol.

References

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