

Introduction

Despite how often lightning occurs in storms, it is widely misunderstood and underestimated as a public threat. It wasn't until the 1990's when scientists from the American Meteorological Society (AMS) created Lightning Safety Guidelines for outdoor venues. But why are these guidelines needed? When an individual attends a large outdoor event, such as a National Collegiate Athletic Association (NCAA) Division I football game, their risk of exposure to lightning increases. By surveying adult audiences at University of Oklahoma football games and utilizing National Lightning Detection Network (NLDN) data, this project aims to analyze the risk due to the threat of lightning on universities in the Southeastern Conference (SEC).

Research Questions

What factors cause variations in lightning anxiety?

How does general lightning anxiety compare to lightning anxiety in football environments?

How do variations in lightning anxiety relate to public responses to lightning threats?

How often does lightning strike near NCAA stadiums during the football season?

Is there a 'safest' game time?

Data and Methods

Survey Development:

- Recruited participants at 3 OU home football games
- Approved by OU Institutional Review Board
- Survey Measures:
 - Lightning Anxiety Ο
 - Previous Lightning Experience
 - Lightning Knowledge Ο
 - Intended Protective Actions
 - Demographics Ο
- Designed in Qualtrics to be completed in under 5 minutes
- Collected 224 usable responses

Lightning Data Analysis:

- National Lightning Detection Network (NLDN) is a ground-based array of sensors that detect cloud-to-ground (CG) lightning over the contiguous United States
- Includes NLDN data covering NCAA football season (Aug to Nov) of years 2012-2019
- NCAA safety requirements state stadium evacuation should begin when lightning is within an 8-mile radius of the stadium
 - 8-mile radius was used to bin data surrounding the 16 collegiate stadiums
 - Analyzed diurnal variability of lightning to help determine the safest game time
- Schools in the 2024 SEC were used to provide a wide variety of stadiums and locations across the southeast US



Lightning Safety in NCAA Division I College Football

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- most humid part of the day occurs

