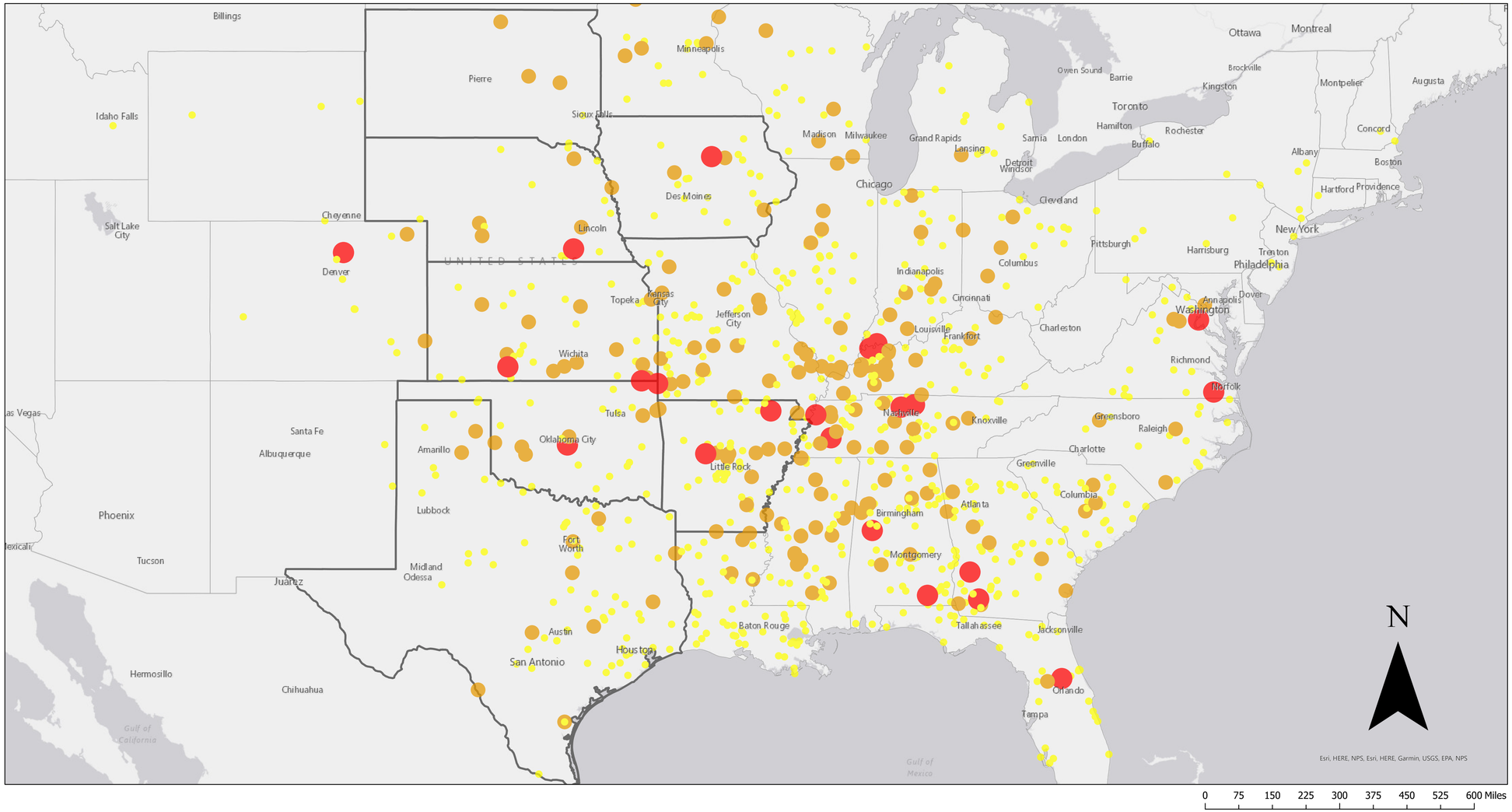
Cluster Analysis of Tornado Events in the United States (2000-2008)



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Map Description: This map displays the results of a cluster analysis of tornado events in the United States. The analysis aimed to identify patterns and similarities among tornado events based on their impact, area affected, property damage, injuries, and fatalities. The clusters are visually depicted on the map, and a table is provided to show the means and labels for each cluster.

Legend

- Tornado Alley

Clusters

- High Impact, Medium Area Affected, Medium Property Damage
- High Impact, Large Area Affected, High Property Damage
- Medium Impact, Small Area Affected, Medium Property Damage
- Low Impact, Small Area Affected, Low Property Damage
- Low Impact, Large Area Affected, Low Property Damage

Cluster Means & Labels

Cluster	Frequency	Area	Property Damage	Injuries	Fatalities	Damage Scale
1 High Impact	15	92600.0 Medium Area	43.15 Medium Damage	156.53 High Injuries	13.93 High Fatalities	11.33 High
2 Medium Impact	182	20046.45 Small Area	15.28 Medium Damage	14.82 Low Injuries	1.15 Low Fatalities	10.04 Medium
3 High Impact	10	193194.0 Large Area	171.72 High Damage	88.2 High Injuries	5.1 Medium Fatalities	15.7 High
4 Low Impact	685	4230.32 Small Area	2.25 Low Damage	3.91 Low Injuries	0.19 Low Fatalities	2.25 Low
5 Low Impact	20	132648.5 Large Area	6.65 Low Damage	10.05 Low Injuries	0.55 Low Fatalities	7.0 Medium

Source: National Centers for Environmental Information. "Tornado Alley." https://www.ncei.noaa.gov/monitoring/extreme-events/us-tornado-climatology/tornado-alley.

Description of Clusters and Analysis: The analysis identified five distinct clusters based on the characteristics of tornado events. Cluster 1 includes 15 tornado events and is characterized by high impact due to a high number of injuries and fatalities, medium area affected, and medium property damage. Cluster 2 includes 182 tornado events and is characterized by moderate impact due to moderate property damage and a low number of injuries/fatalities, a small area affected, and medium property damage. Cluster 3 includes 10 tornado events and is characterized by high impact due to a high number of injuries and a medium number of fatalities, a large area affected, and high property damage. Cluster 4 includes 685 tornado events and is characterized by low impact due to low property damage and a low number of injuries/fatalities, a small area affected, and low property damage. Cluster 5 includes 20 tornado events and is characterized by low impact due to low property damage and a low number of injuries/fatalities, a large area affected, and low property damage.

The map shows that tornado events in the United States can be classified into distinct clusters based on their impact, area affected, property damage, injuries, and fatalities. This information can be used to better understand the characteristics of tornado events and develop strategies to mitigate their impact on communities.