

A Severe Weather Climatology for Arizona

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Providing expedient severe weather warnings in an effort to save lives and property is the most important mission provided by National Weather Service offices in Arizona. A comprehensive understanding of the state's severe weather climatology will better prepare forecasters in anticipating the timing, strength, location and nature of severe weather. This climatological information will also be useful to emergency managers and private citizens in understanding the characteristics of severe weather across Arizona. Therefore, the purpose of this study is to quantitatively describe the severe weather climatology for Arizona using reports from 1959 to 2004.

This paper is a compilation of nearly five decades of meteorological data formed from multiple hazardous weather data sources. Tornadoes, hail, high winds, lightning, flooding, severe winter-weather cases and extreme heat and cold outbreaks are included. Seven sources of information were used to compile the severe weather information: (1) the National Weather Service's (NWS) Storm Prediction Center Database (1950 to 2004), (2) the National Climatic Data Center's Storm Data (NOAA 1959-2004), (3) the National Climatic Data Center's Storm Events Database, (4) the DOT Fatality Analysis Reporting System 1994 to 2004, (5) the University of Arizona Storm Database, (6) Injury and Mortality among Arizona Residents, (7) Arizona Climate The First Hundred Years (Sellers, Hill and Sanderson-Rae). Data Analysis using ArcView GIS version 3.1 allowed plotting of above mentioned databases to determine trends of events with regards to topography along with seasonal and diurnal frequencies.

EXTREME WATER AND WEATHER EVENTS