

LIGHTNING FIRES AND LIGHTNING STRIKES

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December 2010



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Abstract

During the four-year-period of 2004-2008, NFPA estimates that U.S. fire departments responded to an estimated 24,600 fires started by lightning per year. These fires caused an estimated average of 12 civilian deaths, 47 civilian injuries and \$407 million in direct property damage per year. These estimates are based on data from the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA's) annual fire department experience survey. Only 18% of reported lightning fires occurred in homes, but these fires caused a majority of the associated losses. Lightning is also a major factor in wildland fires, and lightning fires burn more acres each than fires caused by humans. Most lightning fatalities do not result from fire, but from individuals being directly hit by lightning. Most of these victims were outside when lightning struck.

Keywords: Fire statistics, lightning

Acknowledgements

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem.

We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

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NFPA No. USS51

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Executive Summary

During 2004-2008, U.S. local fire departments responded to an estimated average of 24,600 fires per year that were started by lightning. These fires caused an average of 12 civilian deaths, 47 civilian injuries, and \$407 million in direct property damage per year. Most of these fires occurred outdoors, but most associated deaths, injuries, and property damage were associated with home fires. Fires started by lightning peak in the summer months and in the later afternoon and early evening. The January 2006 West Virginia coal mine explosion that claimed 12 lives was the deadliest U.S. fire started by lightning in recent years.

In addition to the fires reported to local fire departments, federal and state wildland firefighting agencies reported an average of 11,400 wildland fires started by lightning to the National Interagency Fire Center per year from 2004-2008. These fires burned much more than fires started by human causes. The average lightning-caused fire burned 500 acres, while the average human-caused fire burned just under 40 acres.

Over the 10 years from 2000-2009, 39 U.S. firefighters were killed as a result of lightning-caused fires. These deaths include fatalities during fireground activities, as well as responding or returning to fires. Three of these deaths occurred at structure fires, and the remaining 36 were killed as the result of wildland fires. Eleven of these deaths occurred in helicopter crashes.

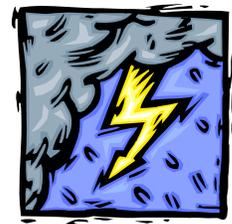
In addition to causing fires, lightning is dangerous on its own. The National Weather Service reported from 2004 to 2008, 38 people were killed per year in lightning strikes. The most common location for these deaths was outside or in an open area. Also, in 2003, the last year for which data is available, 10,200 non-fire lightning strikes were reported to local fire departments. The majority of these, 62%, occurred at home properties.

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Lightning Fires and Lightning Strikes

During 2004-2008, U.S. fire departments responded to an estimated annual average of 24,600 fires started by lightning. These fires caused annual averages of

- 12 civilian deaths
- 47 civilian injuries
- \$407 million in direct property damage.

The January 2006 West Virginia coal mine explosion that claimed 12 lives was the deadliest U.S. fire started by lightning in recent years.

Fires started by lightning peak in the summer months and in the late afternoon and early evening.

Outside and other fires accounted for 74% of the lightning fires reported to local fire departments.

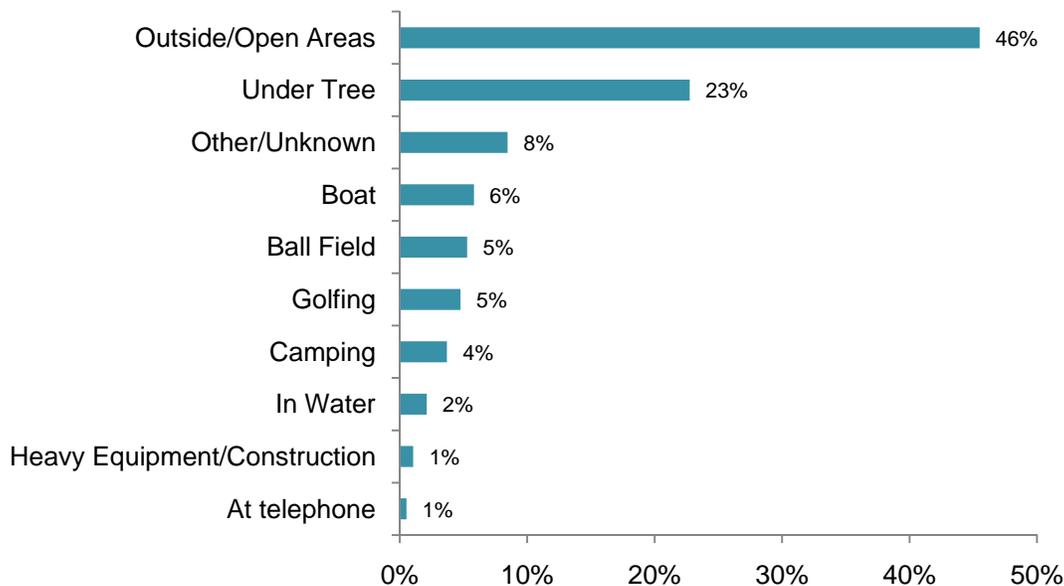
In 2004-2008, only 18% of reported lightning fires occurred in homes, but these accounted for

- 88% the associated civilian deaths
- 77% of the associated injuries
- 70% of the direct property damage

National Interagency Fire Center statistics show that in 2004-2008, an average of 11,400 (14%) of reported wildland fires were started by lightning per year. However, wildland fires caused by lightning caused much more average damage per fire (500 acres vs. 40 acres) than fires caused by humans.

Lightning also causes non-fire deaths and injuries. According to the National Weather Service reports, lightning caused an average of 38 deaths and 238 injuries per year.

Lightning Fatalities by Location: 2004-2008



Source: These statistics are compiled by the Office of Services and the National Climatic Data Center from information contained in *Storm Data*. Online at <http://www.weather.gov/os/hazstats.shtml>.