



Introduction

Wildland firefighting is a high-risk occupation, evidenced each year by deaths or injuries in the line of duty. One way to help reduce wildland firefighter deaths is to identify factors responsible for past fatalities so we can mitigate those factors in future fire seasons.

My interest in firefighter fatalities was fueled by my work on entrapment and fatality investigation teams, beginning with the Dude Fire in 1990 and continuing to the Sawtooth Prescribed Burn fatality in 2003. In 1999, while serving as the Fire, Aviation, and Residues Program Leader at the Forest Service, U.S. Department of Agriculture, Missoula Technology and Development Center (MTDC), I wrote a report on firefighter fatalities, “Wildland Fire Fatalities in the United States: 1990–1998” (figure 1). That report was based on data from the National Wildfire Coordinating Group’s (NWCG) Safety and Health Working Team “Safety Gram,” issued annually to document firefighter fatalities and entrapment events across the United States. “Wildland Fire Fatalities in the United States: 1990–1998” underreported aircraft accidents by three fatalities and heart attacks by one fatality.

Highlights...

- From 1990 to 2006, 310 persons died during wildland fire operations.
- The number of wildland fire-related fatalities increased 26 percent from the initial period (1990 to 1998) to the most recent period (1999 to 2006).
- The leading causes of death are now aircraft accidents and vehicle accidents, closely followed by heart attacks.

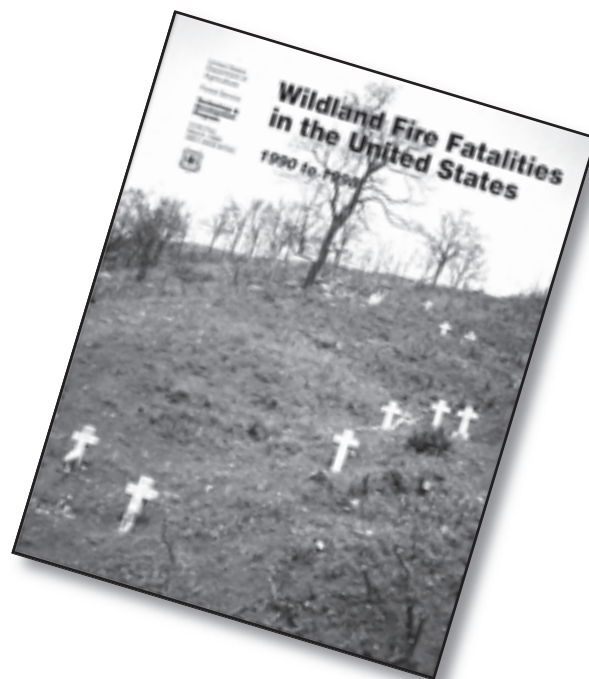


Figure 1—The 1999 report showed that from 1990 to 1998 burnovers killed more wildland firefighters than any other cause.

This report, “Wildland Firefighter Fatalities in the United States: 1990–2006,” continues to rely on the “Safety Gram,” comparing data from the original 9-year period (1990 to 1998, called the initial period) to data from the following 8 years (1999 to 2006, called the most recent period). Fatality data (figure 2) is summarized for the entire 17-year period (1990 to 2006, called the entire period). Because the most recent period is 1 year shorter than the initial period, the basis for comparison between the two periods will be the annual average during each period.

This report is sponsored by the NWCG Safety and Health Working Team and the MTDC Fire and Aviation Program. The Safety and Health Working Team collects and analyzes data to validate and prioritize safety issues and works to improve firefighter health, safety, and effectiveness.

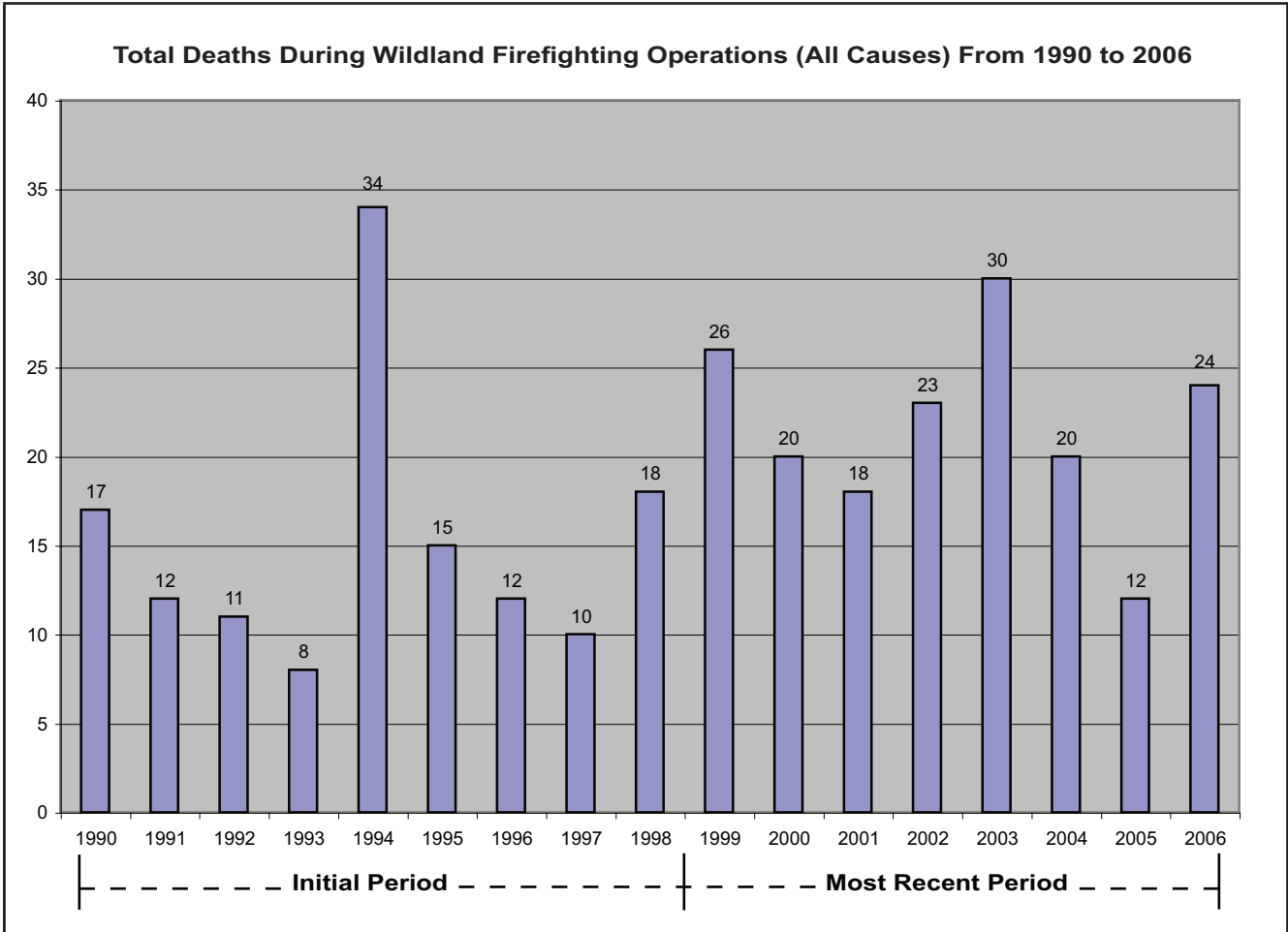


Figure 2—The annual death toll for persons who died during wildland fire operations from 1990 to 2006 (310 total deaths).



Other Wildland Firefighter Fatality Reports

Although wildland fires have burned the American landscape since long before the arrival of Europeans, they received little national attention before the 20th century. Even the Peshtigo Fire that burned more than 1.5 million acres in Wisconsin, killing more than 1,200 people, was overshadowed by the Great Chicago Fire that began the same day in 1871.

When the Big Burn of 1910 killed at least 78 firefighters and burned millions of acres in northern Idaho and western Montana, the public and politicians became aware of the tremendous loss of life and property associated with wildland fires.

The NWCG report “Historical Wildland Firefighter Fatalities 1910–1996” (1997) records numerous wildland firefighter fatalities from 1910 to 1948. On August 6, 1949, 13 firefighters died in a sudden blowup in Montana’s Mann Gulch. A thorough investigation was conducted. The events were popularized in the 1952 movie, “Red Skies of Montana,” and documented in Norman Maclean’s best-selling book, “Young Men and Fire.”

In the 1950s, 15 firefighters were killed at the Rattlesnake Fire in northern California (1953) and another 11 died at the Inaja Fire in southern California (1956). After those fires, the Chief of the Forest Service commis-

sioned a task force that prepared a “Report of Task Force to Recommend Action to Reduce the Chances of Firefighters Being Killed by Burning While Fighting Fire” (1957). That study resulted in development of the “10 Standard Fire Orders” and the “13 Situations That Shout Watch Out” (now “18 Situations That Shout Watch Out”).

A Forest Service fire safety review team issued a 1967 report: “A Plan to Further Reduce the Chances of Men Being Burned While Fighting Fires.” After more fire fatalities in the late 1960s and throughout the 1970s, the Forest Service issued the “Preliminary Report of Task Force on Study of Fatal/Near-Fatal Wildland Fire Accidents” (1980). The report documented Forest Service firefighter fatalities from 1926 to 1979, firefighter fatalities for other agencies from 1933 to 1979 (including firefighter fatalities in Canada), and near misses for all agencies from 1949 to 1979.

The National Fire Protection Association (NFPA) has also looked at wildland firefighter fatalities, sometimes at the request of Federal agencies. An NFPA report in August 1988 summarized all firefighter fatalities in the United States, including those involving wildland firefighters. Two NFPA studies looked specifically at wildland firefighter fatalities: an August 1991 report covered fatalities from 1981 to 1990 and a special analysis in 1997 covered wildland firefighter fatalities from 1987 to 1996. None of these studies relied solely on the annual “Safety Gram.”

This study is based on the annual “Safety Gram” (figure 3) produced by the NWCG’s Safety and Health Working Team, allowing data from the initial period to be compared with that from the most recent period. The “Safety Gram” reports fatalities that meet the Safety and Health Working Team’s criteria, as well as any fire entrapments and significant vehicle accidents that occur, even if they do not result in fatalities.

The main data in the “Safety Gram” include:

- The cause of death
- The agency for which the deceased worked
- The State where the fatality(ies) occurred

Other factors used in fatality analyses prepared by other groups and agencies were not used in this report. They include:

- **Month:** While the month of a fatality may be an important factor in structural firefighting where there is a year-round fire workload, it has little relevance in wildland firefighting. The occurrence of wildland fire is generally seasonal across the United States, driven by highly variable weather conditions.
- **Ages of Deceased:** This information is not reported in the “Safety Gram.”
- **Time of Death:** This information is not reported in the “Safety Gram.”

The 1999 report, “Wildland Fire Fatalities in the United States: 1990 to 1998,” lumped all contractors into a single class. In recent years, the contracted workforce has increased significantly. To distinguish trends, this report breaks ground contractors into a separate category from aviation contractors, such as pilots and flight crews.

During the entire period, seven events with 3 to 14 fatalities each have the potential to distort the findings and mask some trends. This report shows the analysis and trends with and without these events. Percentages may not add up due to rounding.



SAFETY GRAM
Safety and Health Working Team

Fatalities, Entrapments and Serious Accidents Summary for 2006

The following data indicate the location, entrapments and injuries and other serious accidents associated with wildland, wildland fire and prescribed fire operations in calendar year 2006. The information was collected by the NWCG Safety & Health Working Team, with confirmation of the fatalities from the National Fire Protection Association (NFPA).

Date	Fire Location Jurisdiction	Activity and Type of Accident	Agency / Status of Personnel Involved	Type of Accident	Number of People	# Deaths Reported	Fatalities	Injuries
2/20	Hillside Rural Road Fire, Montague, Texas, Fireman Service	Firefighting	Private / USFS	Other Accident	2			Back & joint injuries
3/18	Coahoma Fire, Cloud County, Georgia	Firefighting	State/CAJ	Entrapment	2	1	1	1 st & 2 nd degree burns
3/1	Shapiro County, Durbin, Oklahoma	Firefighting	Volunteer	Entrapment	3	0	0	1 st degree burns, smoke inhalation, sprained ankle
3/2	Carroll County, Spotsylvania, Virginia	Firefighting	Volunteer	Entrapment	4	0	0	1 st & 2 nd degree burns, severe injuries
3/2	Yuma County, Estley, Colorado	Firefighting	Volunteer	Heart Attack	1		1	
3/2	Waynesville, North Carolina	Firefighting	Volunteer	Engine Rollover	2		1	Broken back, neck, leg and torso
3/12	Gray County, Green, Texas	Firefighting	Volunteer	Entrapment	1	0	0	
3/12	Sherman, Texas	Firefighting	Volunteer	Entrapment	1	0	0	

Figure 3—The “Safety Gram” published annually by the National Wildfire Coordinating Group’s Safety and Health Working Team was the source of the data used in this report.