



A40 Demography of the Camp Fire Fatalities

Samuel A. Mijal, BS, Phoenix, AZ 85004; P. Willey, PhD, Chico State University, Chico, CA 95929-0400*

Learning Overview: After attending this presentation, attendees will understand which segments of a population are disproportionately impacted during catastrophic events. Such was the case involving foothills communities devastated by the November 2018 Camp Fire in northern California. There, older adults and those with mobility inhibiting disabilities died in greater proportions than other groups.

Impact on the Forensic Science Community: This presentation will impact the forensic sciences community by serving as a case study for identifying high-risk groups in wildfire mass fatality events. Employing these results and insights as a foundation, the most at-risk groups can be identified and slated for education, planning, and warning before catastrophic events occur. In addition to preparations, those at-risk groups should be the focus of resources during emergencies, as well as search and recovery and identifications following catastrophes.

Data for the Camp Fire Communities (Concow, Paradise, and Magalia) came from several sources. The 2010 United States census provided the communities' age and sex distributions. Economic and disability information were derived from the 2017 American Community Survey estimates. The Butte County Sheriff's Office provided the fatalities' ages (recorded to the most recently completed whole year), sex, and locations. Information concerning the victims' disabilities came from a local newspaper's accounts consisting primarily of personal recollections from family members and friends.

Approximately 38,000 inhabitants lived in the three Camp Fire Communities, with the largest town (Paradise) comprising about two-thirds of that total. Stereotyped as retirement communities, the foothill towns tended to have greater proportions of older adults, and many inhabitants lived on limited incomes in a community where the median income was \$10,000 below the national median and \$19,000 below the state medium (Community median income was \$47,743). In addition, these towns had a greater proportion of disabled community members. As examples, the Communities accounted for nearly double the rate of ambulatory and independent living-challenged members than the state or country.

Eighty-five individuals died in the Camp Fire, 83 of whom have been identified. This demographic work uses the identified individuals and omits the other two from further consideration. No infants, children, or adolescents died from the blaze. In addition, very few young and middle-aged adults expired. On the other hand, older adults represented a disproportionately high number of victims. The ages of the fatalities varied from 20 to 99 years, with a mean of 72.06 years. By sex, female fatalities exceeded male fatalities: 44 females, 39 males. The fatality age distribution by sex proved statistically similar. However, when four outliers were excluded from the data set (two younger outliers of each sex), a statistically significant difference occurs. Female fatalities averaged five years older than males. The ancestral makeup of the Camp Fire Communities was largely White (92%), with 6.94% self-identifying as Hispanic. Ten (12%) fatalities had Spanish surnames, a distribution greater than the census percentage and approached, but failed to achieve, statistical significance. Anecdotal evidence provided by personal accounts indicated that Camp Fire victims exhibited high rates of mobility-inhibiting disability.

The towns of Concow, Magalia, and Paradise represented communities with higher-than-average at-risk populations with advanced age and mobility-inhibiting disability being the main issues. Assessment of the Camp Fire victims' and Communities' demographic variables reinforced how these risk factors contributed to individual casualties.

Demography, Camp Fire, Mass Fatality Event