

EXTREME HEAT



DESCRIPTION

Extreme heat is defined as weather that is “substantially hotter and/or more humid than average for a location at that time of year” (*Hazard Identification and Risk*, 2011, p. 31) The Heat Index, which measures the “apparent temperature” when considering both air temperature and humidity, is used by organizations like the National Weather Service to identify extreme heat days. Extreme heat is particularly dangerous when occurring for a prolonged period (known as a “heat wave”).

Periods of extreme heat can cause serious injury or death to exposed populations, especially the elderly, infants, transient populations, persons with physical and mental impairments, and those without access to air conditioning or social services. Extreme heat is also associated with increased demands for electricity and water, and can potentially stress local and regional infrastructure and services. Prolonged periods of extreme heat can have negative impacts on farming and livestock, and may lead to algae blooms that increase the risk of fish kills. Extreme heat can also have a negative impact on health and productivity, with a direct impact on economic activity and travel. Warming temperatures and extreme heat have also been shown to have negative impacts on forests, aquatic ecosystems, and wildlife and fish populations (*Rocky Mountain Forests*, 2014).

EXTREME HEAT IN COLORADO

Summertime temperatures are lower in the mountains and at higher elevations; therefore, extreme heat hazards in Colorado tend to occur in the Front Range, Grand Valley, Eastern Plains, and extreme southwest (*Colorado Natural Hazards Mitigation Plan*, 2013, p. 3-38). The number of extreme heat days in Colorado has been rising in recent years. In Denver, for instance, seven of the ten hottest years since 1874 occurred from 2000-2012 (*NWS Boulder Denver*, n.d.b). In Fort Collins, the number of days per year over 90 degrees from 2000-2013 was almost double the historic average (*Extreme Heat*, 2014). While the overall mortality rate due to extreme heat events has been declining in Colorado over the past several decades, largely due to the increased availability of air conditioning and preparedness for extreme heat hazards, certain groups remain vulnerable. Past extreme heat events have caused damage to state and local infrastructure, especially roadways and utility networks.

RELATED HAZARDS

Extreme heat can help create the conditions for drought and can exacerbate the impacts of drought by putting additional stress on available water supplies. Extreme heat can also lead to increased storm activity, which is linked to both high wind and flash flood hazards. It can also contribute to the spread of wildfires.

AVAILABLE DATA SOURCES

Colorado Natural Hazards Mitigation Plan

The *Colorado Natural Hazards Mitigation Plan* is a key resource for an overview of extreme heat hazards and summaries of national and state-level data on extreme heat.

dhsem.state.co.us/emergency-management/mitigation-recovery/mitigation/state-colorado-natural-hazards-mitigation-plan

National Weather Service

The National Weather Service is a key resource for the forecasting of extreme heat events and for the issuance of advisories and warnings. [weather.gov](https://www.weather.gov)

National Oceanic and Atmospheric Administration (NOAA)

The National Oceanic and Atmospheric Administration’s National Climatic Data Center (NCDC) provides data on temperatures and extreme heat for the United States and for Colorado.

ncdc.noaa.gov/cdo-web/datasets

FEMA and Ready.Gov

FEMA and Ready.Gov have published useful guides for extreme heat preparation and response.

[ready.gov/heat](https://www.ready.gov/heat)

APPLICABLE PLANNING TOOLS AND STRATEGIES

The table below cites applicable planning tools and strategies that are profiled in this guide. In addition to the tools and strategies cited below, other site development standards such as **site selection, building orientation, and landscaping** can also be important tools for reducing potential risks from extreme heat.

APPLICABLE PLANNING TOOLS AND STRATEGIES – EXTREME HEAT	
Addressing Hazards in Plans and Policies	<ul style="list-style-type: none"> • Comprehensive plan • Climate plan • Hazard mitigation plan • Pre-disaster planning
Strengthening Incentives	N/A
Protecting Sensitive Areas	N/A
Improving Site Development Standards	N/A
Improving Buildings and Infrastructure	<ul style="list-style-type: none"> • Critical infrastructure protection
Enhancing Administration and Enforcement	N/A