

Wildfires

Wildfires are causing more frequent and wider-ranging societal impacts, especially as residential communities continue to expand into wildland areas. Since 2000, there have been twelve wildfires in the United States that have each caused damages exceeding \$1 billion; cumulatively, these twelve wildfires have caused a total of \$44 billion in damages.

Basics



Wildfires are unplanned fires that burn in natural areas, such as grasslands, shrublands, forests, or other environments, including wildland areas where people live.¹ They can start from both human and natural causes, such as lightning, and they affect every state in the U.S. Nearly 85 percent of U.S. wildfires are from human causes, including uncontrolled campfires, burning debris, sparks from malfunctioning equipment, discarded cigarettes, and arson, accounting for 44% of the total area burned across the U.S.^{2,3} [Read more](#)

Frequently Asked Questions

How do changes in land use impact water resources?

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What are the effects of contaminants on water quality?

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What affects the quality of surface and groundwater?

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What is surface water and what affects its availability?

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What is the evidence that our present-day climate is changing?

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Climate

Climate has an enormous impact on society, with wide-ranging effects on public safety and health, the economy, transportation, infrastructure, and agriculture. Geoscientists investigate our climate's past and present to better understand how it may change in the future.



Drought

Since 1980 the United States has experienced more than 24 major droughts, resulting in almost 3,000 deaths and economic impacts exceeding \$225 billion. All areas of the U.S. have some drought risk.



Floods

Flooding is the most common and costliest natural hazard facing the United States. Each year, flooding causes billions of dollars in damages and dozens of deaths nationwide.



Hazards

Natural hazards such as earthquakes, landslides, hurricanes, floods, and wildfires endanger public health and safety, threaten critical infrastructure, and cost our economy billions of dollars each year. Geoscientists study these hazards to provide information and warnings to populations at risk.



Landslides

Landslides affect all 50 states and U.S. territories, where they cause 25 to 50 deaths and more than \$1 billion in damages each year. Geoscientists study and monitor landslides to identify at-risk areas, prepare populations, and improve our understanding of why, when, and where landslides happen.



Water Quality

Water quality refers to whether water is suitable for a certain purpose, like drinking or irrigation. Both natural and man-made factors can affect water quality. Contaminants can include bacteria, metals, and man-made chemicals like pesticides or pharmaceutical drugs.



Weather Hazards

Weather hazards impact the entire country, with enormous effects on the economy and public safety. Since 1980, weather/climate disasters have cost the U.S. economy more than \$1.5 trillion. In an average year, the United States will be affected by six billion-dollar weather/climate disasters, but this number has increased in recent years: from 2013-2017 the average was 11.6 events.

Maps & Visualizations



Interactive map of post-fire debris-flow hazards in the Western United States

U.S. Geological Survey

The U.S. Geological Survey conducts post-fire debris-flow hazard assessments for many major fires across the Western United States. The information from these assessments is provided in an interactive map, allowing users to view fires by location or name and access detailed maps of debris-flow...

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Case Studies & Factsheets



Geologic maps identify post-wildfire hazards in Colorado

Geologic maps are useful in identifying areas that may be affected by post-wildfire debris flows. Land-use planners use these maps to identify potential hazards in areas that are proposed for development and to develop mitigation strategies. The maps can also focus post-wildfire emergency planning...

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Webinars & Forums



Adapting Wildfire Management to 21st Century Conditions

This webinar explores recent trends in wildfires and changes in contributing factors / drivers of these hazards and features case studies of wildfire policy and management strategies in the western and southern United States.

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