

2012 U.S. Extreme Weather

The damages and impacts of a warming world

With oppressive heat waves, devastating droughts, ravaging wildfires, and hard-hitting storms, 2012 was one for record books. Thousands of precipitation and temperature records were broken, plaguing almost all of the United States this year and underscoring the connection between increasingly frequent and intense extreme weather and climate change. With climate change, we've set the table for precisely this kind of extreme weather, and unfortunately, our changing climate threatens to alter the weather for years to come.

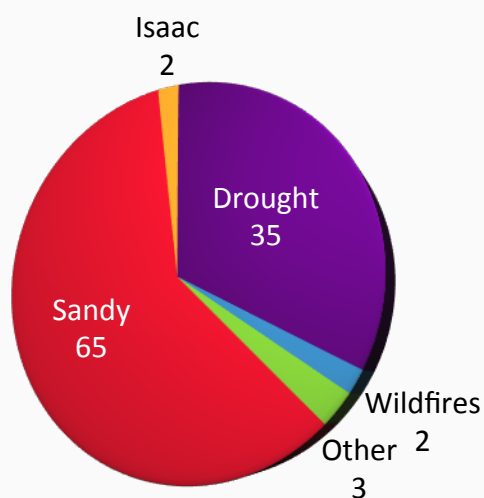
A year of extremes:

- 2012 was the [second most extreme year](#) on record for the nation, according to the U.S. Climate Extremes Index.
- The year had [11 disasters](#) costing \$1 billion or more. The only year on record that had

more billion dollar disasters was [2011](#), which had 14. [According to Munich Re](#), extreme weather caused \$107.2 billion worth of damage in the U.S in 2012. Furthermore, Munich Re says, "[The climatic changes detected are in line with the modelled changes due to human-made climate change.](#)"

2012: Over \$100 Billion in Damage

Climate-Related Disaster Costs (billions)

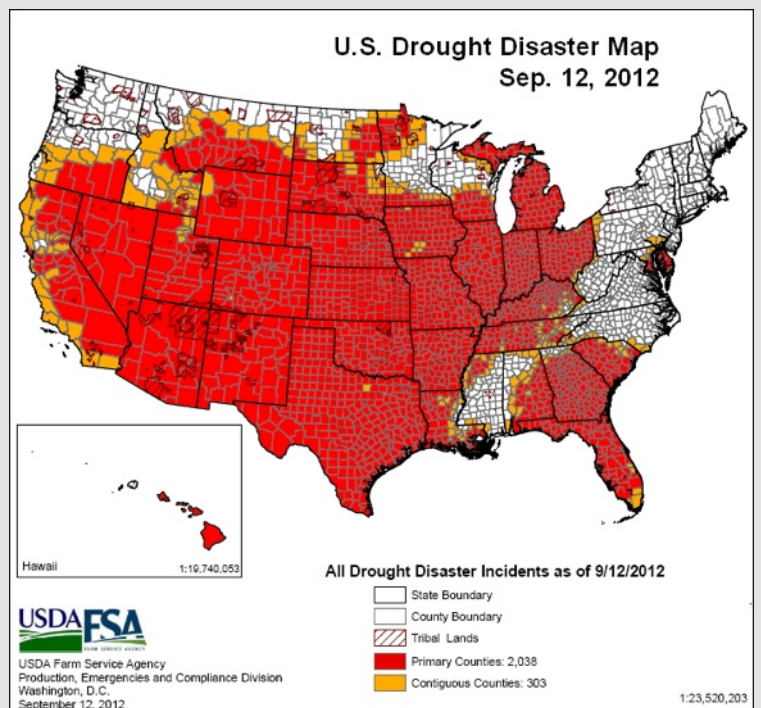


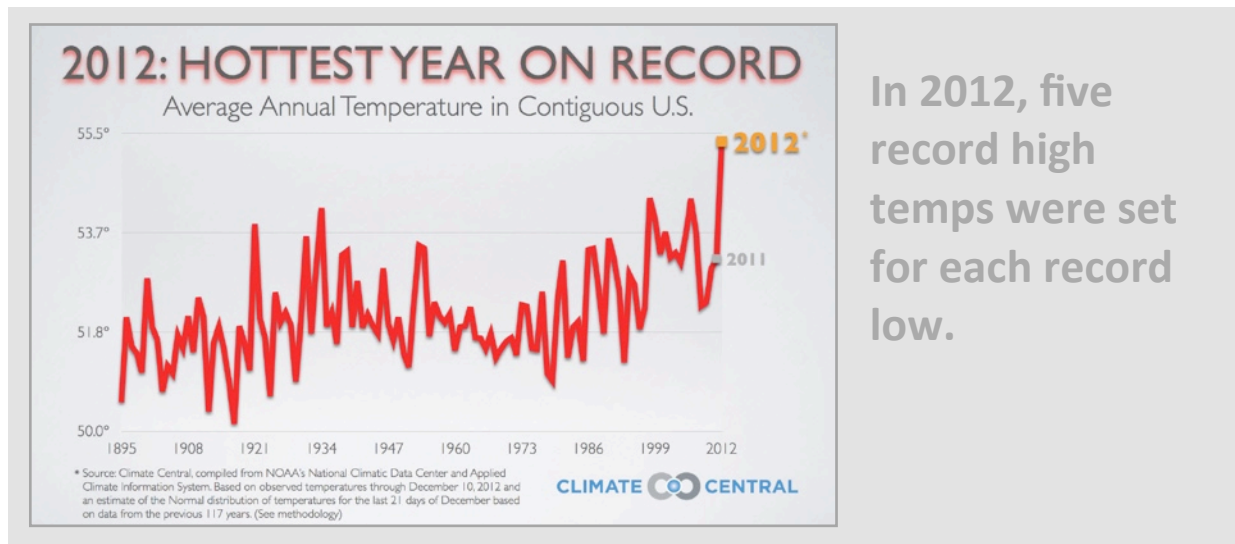
Climate-related disasters cost the United States billions in 2012. Indirect losses due to cascading economic effects may be far greater.

Drought disaster:

- In 2012 the USDA declared a federal disaster area in more than [half of all the counties](#) in the United States, mostly [due to drought](#). This was the largest disaster declaration ever made by the USDA.
- Global reinsurance firm Aon Benfield estimated the cost of the drought at [\\$35 billion](#).
- According to the [Palmer Drought Severity Index \(PDSI\)](#), the catastrophic drought reached its peak in sheer amount of area affected in July with approximately 61 percent of the contiguous United States in moderate-to-exceptional drought.
- According to the draft of the [Third National Climate Assessment 2013](#), the drought affecting the western U.S. over the last decade represents the driest conditions experienced in 800 years. Scientists note that today's drought is different from the [1930s drought](#), as that drought was [exacerbated by farmers over-plowing](#) the soil, which contributed to the evaporation of soil moisture.
- Stretches of the [Mississippi River](#) fell dangerously close to the record low water levels of 1988, which is especially notable because of the work done by the Army Corps of Engineers to keep the largest inland marine system in the world passable.

2012 marked the largest drought declaration ever made by the USDA.





In 2012, five record high temps were set for each record low.

Unprecedented heat:

- [2012 was the warmest year](#) on record for the contiguous United States, and July 2012 was the [hottest month in U.S. history](#).
- In 2012 the U.S. experienced [362 all-time record high temperatures](#) and [zero all-time record lows](#). The ratio of daily record high temperatures to daily record lows in [2012](#)

[was about 5 to 1](#), which is the greatest ratio for any year in National Climatic Data Center (NCDC) records.

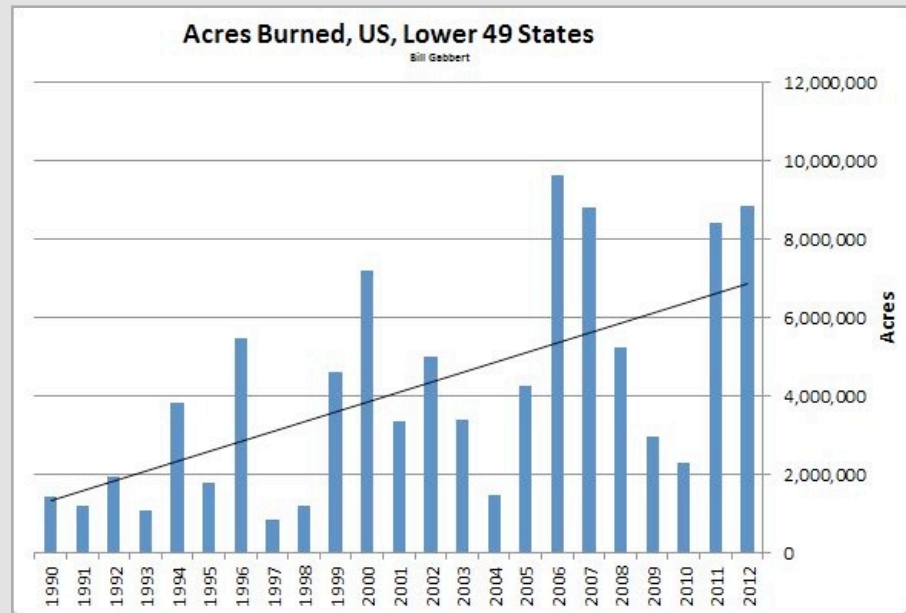
- [Nearly one-third of the nation's population](#), an estimated 99.1 million people, experienced 10 or more days of summer temperatures greater than 100°F. Although the estimate of excess mortality due to heat stress resulting from the 2012 summer heat wave is still unknown, the heat wave caused [123 direct deaths](#).



West Nile virus:

- More than 2,100 cases of West Nile virus, including 92 deaths, were reported through [early September of 2012](#), setting a record for highest human toll since the disease was first detected in the U.S. in 1999. As of early December, there were [5,387 cases reported](#), which is the highest number of annual cases since 2003. [Studies have shown that West Nile virus epicenters](#) have coincided with high summer temperatures. The changing climate also affects the [life cycle and distribution of the organisms](#) that carry a number of viruses, including the West Nile virus.

Fire size has been increasing along with hot and dry conditions.



Wildfires in the west:

- [Over 9.2 million acres](#) were burned by wildfires in 2012, making the fire season the third worst in U.S. history. The area burned was larger than the [state of Maryland](#), and the cost is estimated at [\\$2 billion](#).
- The Whitewater-Baldy Complex wildfire in southwestern New Mexico was the [largest in state history](#). The previous record was set in 2011.
- The Waldo Canyon Fire caused the evacuation of more than 32,000 residents and caused more than \$352.6 million in damage. It [holds the record for most destructive and expensive](#) fire in Colorado state history.

Derecho storm:

- Fueled by extreme heat, the derecho event in late June slammed 700 miles of the U.S. with violent winds that left [22 dead and millions without power](#).
- Washington D.C., one of the areas most affected by the derecho, set a [June record high temperature](#) during that time, while [Columbia, S.C. broke its all-time temperature record](#).

Active cyclone season:

- 2012's North Atlantic tropical cyclone season activity was [above average](#) with [19 named storms, ten hurricanes, and one major hurricane](#). The year marked the third consecutive North Atlantic tropical cyclone season with 19 named storms, and ties as the third most active season for the basin.
- Hurricane Sandy devastated the Northeast, killing [147 people](#). According to Aon Benfield, the storm cost [\\$65 billion](#), making it the [second-costliest hurricane](#) in U.S. history.
- Hurricane Isaac struck in August, dumping 7.86" of rain at New Orleans International Airport. This [set a daily rainfall record](#) and shattered the 4.5" mark established by Hurricane Katrina in 2005. New Orleans averages 5.98" of rain in an entire month. It is also estimated that Hurricane Isaac caused [\\$2 billion in onshore economic damage](#) to Louisiana and Mississippi.
- Tropical cyclone Debbie made landfall in June, and produced record-breaking rainfall across Florida. In some locations over [20" of rain fell in 24 hours](#). When Debbie formed, it was the [first time ever that four storms formed](#) before July [since record keeping began in 1851](#).

Additional Resources:

- [National Overview - Annual 2012](#), NOAA
- [Ruined Summer: How Climate Change Scorched the Nation in 2012](#), NWF
- [2012 Record-Breaking Heat](#), Climate Central
- [Billion-Dollar Weather/Climate Disasters](#), NOAA
- [2012 Natural Catastrophe Year in Review](#), Munich Re
- [Sandy Tops List of 2012 Extreme Weather & Climate Events](#), Climate Central
- [Top Ten Annual Weather/Climate Events](#), NOAA
- [Drought \(U.S. Drought of 2012\)](#), New York Times
- ["Climate Extremes: Recent Trends with Implications for National Security" report](#), Harvard
- [Roundup of Summer Records](#), Climate Communications