

2023 is the hottest year on record, but not in Phoenix

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The summer of 2023 was the hottest on record globally, and scientists believe 2023 will end with the overall highest temperatures of any year ever documented.

But not for Phoenix.

The warmest year recorded in Phoenix remains 2017, according to Austin Jamison, a meteorologist at the National Weather Service in Phoenix, with an overall average of 77.3 degrees, followed by 2020 with 77.2 degrees. Those readings are an average of daily high and low temperatures.

For now, 2023 is tied for the third-warmest year on record in Phoenix based on an average temperature of 77.1 degrees, and projections suggest this year may end as the fifth-hottest.

But not the hottest, even after that long, sweltering summer.

“The El Niño we’re experiencing right now is really helping to warm temperatures globally,” Jamison said. “But July stands out even here in Phoenix, in terms of heat.”

So after a summer of so many high temperature records, how was this year not the hottest ever for Phoenix?

Phoenix set new records this summer, including heat-related deaths

Phoenix got a late start to the summer. June 25 was the first day temperatures hit 110 degrees. The summer heat bore relentlessly on, ultimately amassing 54 more days of 110-degree or above weather.

Because of the delayed beginning of the temperatures that Arizona gets so much recognition for, June ended with just four days of 110–112-degree weather, which, according to Jamison, is not that hot for June in Arizona.

July, on the other hand, was a differ-

ent story.

Every day but one in July reached a temperature of 110 degrees or higher. Three days hit 119 degrees, the days hottest in July. The sole day of the month that did not make the cut was July 31, which eased off to 108 degrees.

Aside from setting records and making headlines, this kind of heat also brought with it serious issues and consequences. The Maricopa County Department of Public Health has confirmed 579 heat-related deaths this heat season, with 56 still under investigation, according to a 2023 heat report.

Even the cactuses had a rough summer

Humans were not the only casualties of the heat. Kimberlie McCue, the Desert Botanical Garden’s Chief Science Officer, reported that an “exorbitant” number of cactuses succumbed to the heat this summer, and are still feeling the effects.

“Cacti have amazing adaptations to not only survive in the desert environments, but to thrive in them as well,” McCue said. “But they are living things, and like all living things, they have tolerance limits beyond which their functioning starts to break down, and they’re adversely affected.”

Scientists cannot put a number on how many cactuses have fallen across metro Phoenix due to the heat, but the Desert Botanical Garden has asked residents and volunteers to help. People can download a free app, iNaturalist, to map and share details of biodiversity, more specifically, of saguaro cactuses.

Garden scientists also released a short online form that documents saguaros that are stressed or dead. The form asks for the age and general location of the cactus, as well as the estimated size and possible cause of death.

Considering the desert saw as much damage and death as it did this summer, how did the rest of the globe fare?

Globally, 2023 is the hottest year ever recorded

Josh Willis, an oceanographer and climate scientist at NASA's Jet Propulsion Laboratory in Southern California credited much of the summer's record temperatures to "exceptionally high sea surface temperatures, fueled in part by

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the return of El Niño."

In the 174 years the National Oceanic and Atmospheric Administration has been recording data, June through November 2023 were the warmest those months have ever been.

"2023 has now had six record-breaking months and two record-breaking seasons," said Samantha Burgess, deputy director of the Copernicus Climate Change Service, in a news release. "The extraordinary global November temperatures, including two days warmer than 2°C above preindustrial (levels), mean that 2023 is the warmest year in recorded history."

With both air and ocean temperatures higher than usual, a strong El Niño emerged. East Africa got hammered with floods and landslides, and the drought in South America has continued.

Australia remains locked in a heat wave, which has contributed to more than 20 wildfires that have roared across the land. Southern Europe and Northern Africa also experienced extreme heat, and Canada's wildfire season raged on at intensities never seen before. Hawaii also endured the deadliest wildfire in America for more than 100 years; at least 99 people died.

With El Niño taking charge across the globe, scientists expect effects will continue to be felt well into 2024, meaning next year may be even warmer than this one.

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