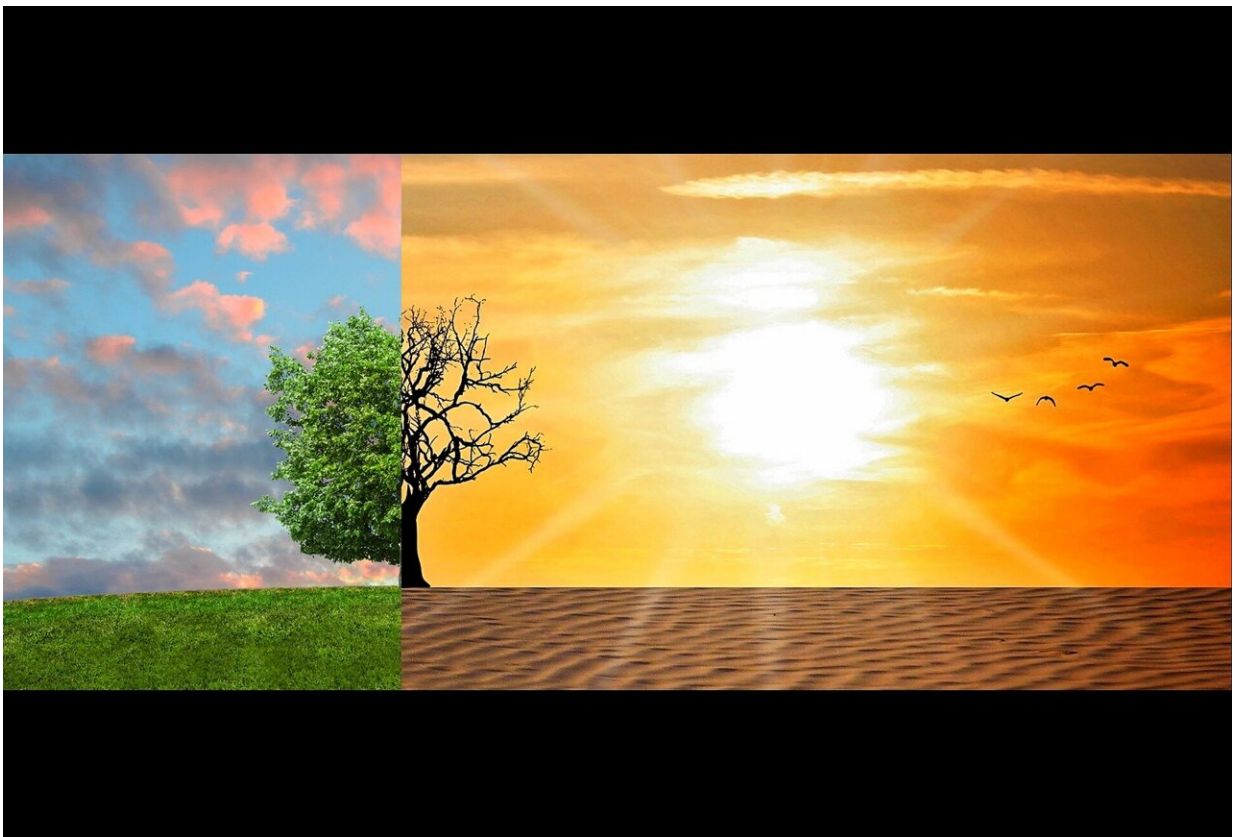


Feds release bleak 2022 climate change data: Oceans warm, global temps among hottest on record

January 13 2023, by Dinah Voyles Pulver



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In one announcement after another this week, a grim accounting emerged of the world's extreme weather and climate disasters in 2022.

The science leaves "no doubt" about the impacts of the warming climate, Bill Nelson, administrator of the National Aeronautics and Space Administration, said during a briefing Thursday. "Sea levels are rising. Extreme weather patterns threaten our well-being across this planet."

The nation's two [federal agencies](#) charged with weather and climate observations said in 2022:

- Ocean heat reached a new high
- Arctic sea ice was second lowest level ever recorded
- Europe saw its second warmest year on record, but much of western Europe was the warmest ever

But when it comes to [extreme weather](#) and the impacts of climate change, there's no place like home. The U.S. led the world again last year in extreme weather events and disasters, the National Oceanic and Atmospheric Administration said on Tuesday.

Oceans get even warmer and saltier

The world's oceans—which absorb more than 90% of the world's excess heat—were again the hottest on record last year.

"Year after year we are breaking records for ocean heat content," Michael Mann, a climate scientist at the University of Pennsylvania, tweeted Wednesday. Mann was one of a team of 16 international researchers who published a paper Wednesday detailing last year's record [ocean](#) heat.

The hotter and saltier oceans are critical indicators of "profound alterations" taking place in energy and water cycles, the scientists wrote. "The inexorable climb in [ocean temperatures](#) is the inevitable outcome of Earth's energy imbalance, primarily associated with increasing

concentrations of greenhouse gases."

If not for the large storage capacity of the oceans, the world would have warmed a lot more already, said Russell Vose, chief of the analysis and synthesis branch for NOAA's National Centers of Environmental Information.

World temperatures again among warmest on record

NASA and NOAA agreed global average temperatures in 2022 were among the warmest on record, with their data and calculations coming to slightly different conclusions.

Temperatures would have been even higher last year without La Nina keeping things cooler in the Pacific, said Gavin Schmidt, director of NASA's Goddard Institute for Space Studies.

- It's been 46 years since the Earth had a colder-than-average year.
- NASA put the global average temperature at 1.6 degrees above the baseline for 1951-1980 or fifth warmest, tied with 2015.
- The European Commission's Copernicus website also ranked the year 5th warmest.
- NOAA ranked 2022 the sixth warmest at 1.55 degrees above a baseline set between 1901-2000. It does not yet include the Arctic in its calculations.
- La Nina likely contributed a .06 degree Celsius cooling effect on global average temperatures, Schmidt said.

There's almost a 100% chance that 2023 will also be among the top 10 warmest years on record, Schmidt said. And with conditions in the central Pacific Ocean potentially flipping to an El Nino, he and Vose said 2024 could be a contender for warmest year on record.

If the warming continues, the average temperature in a single year could soon top the 1.5 degree Celsius level the world hoped to avoid with the Paris Agreement, Vose said. "There's actually a 50-50% chance that we have one year in the 2020s that maybe jumps above 1.5."

Schmidt guessed the first year with 1.5 degrees warming will be an El Nino year, probably in the early 2030s, but, he said, the world may still be two decades away from sustained warming above 1.5 degrees.

18 billion-dollar disasters in US

"In the U.S. we have consistently had the highest count and the largest diversity of different types of weather and climate extremes that lead to billion dollar disasters," said Sarah Kapnick, NOAA'S chief scientist said Thursday.

The 18 billion-dollar disasters last year were the third most on record, behind 2020 and 2021. They included Hurricane Ian, the mega-drought in the west and a massive snowstorm across much of the country in December.

With a total cost of \$165 billion, the 18 disasters made it the third most costly year on record behind 2017 and 2005, the years when Hurricane Harvey and Hurricane Katrina made landfall in the U.S.

At least 474 deaths were reported last year as a result of the billion-dollar disasters.

Hurricane Ian was the costliest disaster of 2022, with estimated damages so far at \$112.9 billion.

How did US weather in 2022 compare to previous

years?

It was:

- The 27th driest year on record overall.
- The fourth driest year on record in Nebraska.
- The ninth driest in California, thanks to wetter than average conditions during the past two months.
- Alaska's 16th warmest year and fourth wettest year.
- An above average year for tornadoes, with 1,331.

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