

What's the Difference Between Global Warming and Climate Change?



By Mark Mancini | [EcoWatch](#)

On Aug. 18, Iceland held a [funeral for the first glacier](#) lost to [climate change](#). The deceased party was Okjökull, a historic body of ice that covered 14.6 square miles (38 square kilometers) in the Icelandic Highlands at the turn of the 20th century. But its glory days are long gone. In 2014, having dwindled to less than [1/15](#) its former size, Okjökull lost its status as an official glacier.

A plaque was later commissioned to honor the vanishing landmark. At the somber installation ceremony, around 100 people gathered to pay their respects, including hikers,

scientists and Iceland's Prime Minister, Katrín Jakobsdóttir. Speaking to the press, Jakobsdóttir [warned](#) that if current trends continue, her country stands to lose even more of its iconic [glaciers](#) in the near future.

The evidence is [overwhelming](#): Greenhouse gas emissions (and other human activities) are radically transforming the planet on which we live. As a result, California's [wildfire](#) season is getting longer; thawing permafrost has destabilized Russian [infrastructure](#); and yes, most of the world's glaciers are swiftly [retreating](#).

With public concern on the rise, two relevant terms have entered the lexicon: "Climate change" and "global warming." These are often treated as synonyms, but they have different meanings.

Climate and Weather

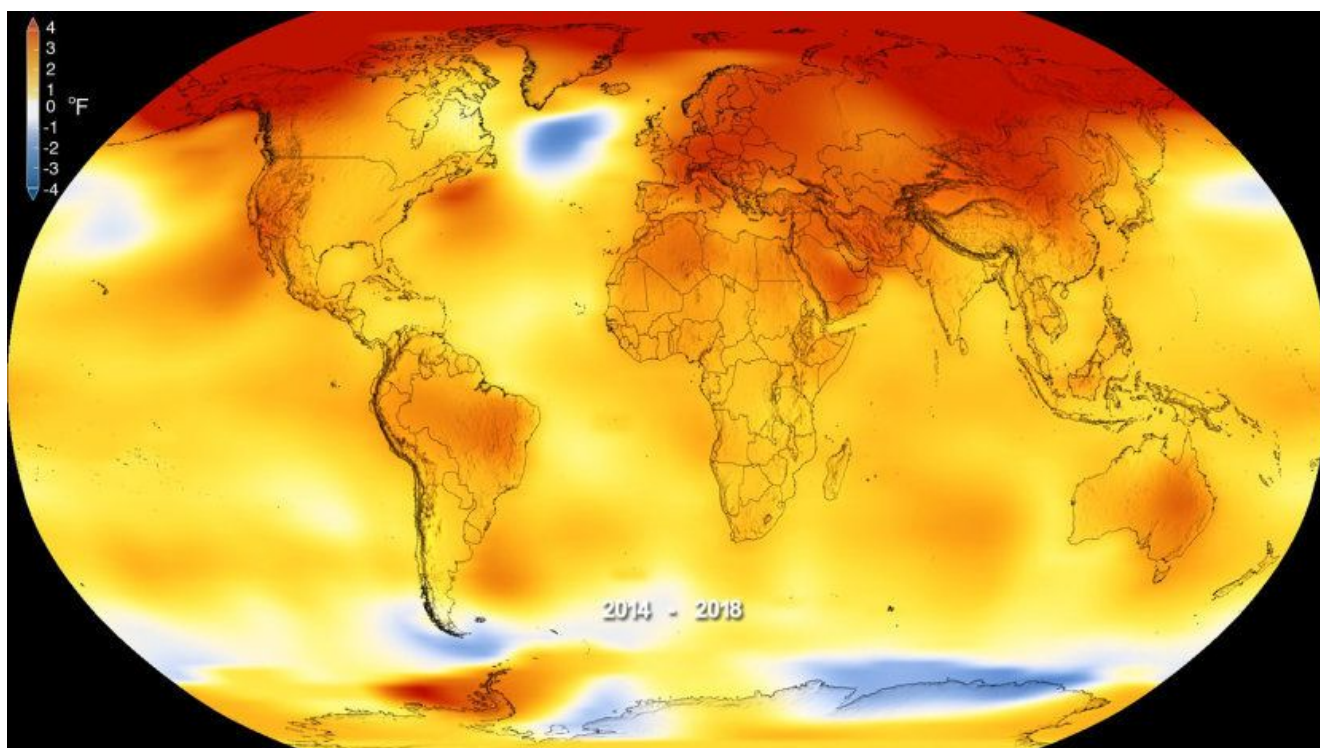
Before proceeding further, there's another bit of terminology that we probably should clear up. The [difference between climate and weather](#). Weather is the short-term [state of the atmosphere](#) in a specific corner of the world. Humidity, temperature, wind speed, atmospheric pressure, and visibility are all [factors](#) that help dictate the weather at a particular moment in time.

In other words, the weather doesn't last very long. It unfolds over the course of days, hours or even minutes. Therefore, it's liable to change quickly – which is why so many of us yearn for constant updates. Whenever you ask if your hometown is "supposed to get any rain" on a given day, you're inquiring about the weather.

Don't confuse weather with climate. The latter is far broader in scope. Basically, climate reflects an area's *long-term* weather averages and trends. Those are often established by *decades* (at least) of meticulous observation. Given the

difference in scale, it makes sense that the climate is much [slower to change](#) than the weather.

And yet changes do occur. Averaged together, all the world's regional climates form what scientists know as the "[global climate](#)." This is liable to evolve and fluctuate over time – as are its regional components.



So far, 2018 is the fourth hottest year on record. Higher than normal temperatures are shown in red and lower than normal temperatures are shown in blue. Ralf Goebel / GEMA

Times Change

Ok, so what exactly does the term "climate change" mean? By the [broadest definition](#), climate change includes any and all long-term fluctuations in one or more climate-related variables – such as average rainfall – within the same location.

Note that this applies to both regional climates and the global climate itself. So let's say northern Europe saw a

dramatic spike in rainstorms and the trend continued for decades on end. That hypothetical scenario would count as an example of regional climate change, no matter what happened elsewhere in the world.

On the other hand, global warming is – well, global. More to the point, the term refers to an increase in a planet's average [surface temperature](#). And here on Earth, that's definitely been climbing.

The National Oceanic and Atmospheric Administration (NOAA) reports that between the years 1880 and 2016, our home planet's average [surface temperatures increased](#) to the tune of 1.71 degrees Fahrenheit (0.95 degrees Celsius).

Mind you, this is nothing to sneeze at. A planet-wide temperature shift of only a few degrees can have enormous ramifications. Fifteen thousand years ago, in a geologically-recent ice age, our world was only about [9 degrees Fahrenheit cooler](#) (5 degrees Celsius) than it is today. And yet, that temperature was enough to keep almost a third of the planet's surface blanketed in ice.

Ah, but we're getting off-track. The main takeaway here is that global warming is a form of climate change – but climate change doesn't always manifest itself as global warming.

An Unprecedented Problem

Strange as it may sound, the recent warming caused by our greenhouse gas emissions may be provoking an increase in both [flooding and droughts](#). While certain areas across the globe now receive enhanced precipitation, soils in some dryer parts of the world stand to [lose a great deal of moisture](#).

To learn more, we reached out to [Dr. Nathan Steiger](#). An atmospheric scientist at Columbia University, Steiger studies the effects that variations in climate have had – and still

have – on human civilizations.

[READ THE REST OF THIS ARTICLE...](#)