World's scientists warn of massive impacts to billions if we pass critical threshold: 'A serious toll on people's lives'

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Two degrees — it's not that intimidating of a figure. A couple-degree increase in Celsius is roughly a 3.6-degree increase in Fahrenheit.

You might not notice if your home's temperature rose that much. But when you're talking about an increase in average global temperature of those few

degrees, you're talking about massive potential impacts on the planet, affecting billions of people.

What causes a global temperature increase of a few degrees?

Earth has already reached an increase of about 2 degrees Fahrenheit since the 1800s era before industrial pollution, per the Intergovernmental Panel on Climate Change (IPCC).

The IPCC is clear on the cause: "Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming," says a summary of IPCC's latest report.

The IPCC holds that the 3.6 degrees F should be a hard upper limit. In fact, it has long recommended capping the increase at the 2015 Paris Agreement's "goal" of 2.7 degrees F (1.5 degrees Celsius).

At that point, the predicted damages are lower than the agreement's less-favorable 3.6 degrees F limit. However, IPCC now sees that a 3.6 degrees F change is likely.

Why is a global temperature increase of a couple of degrees important?

The key to understanding why a few degrees matters is in the word "average." An average global increase of 3.6 degrees F (a couple of degrees in Celsius) means it could be significantly hotter in some places.

According to the German news outlet Deutsche Welle, with a 3.6 degrees F average increase, billions of people could face extreme heat and hazards this century.

Threats will disproportionately affect certain groups, including older adults, children, women, and people with disabilities. People in some geographical areas and countries will be at more risk. And due to urban heat island effects, city dwellers will experience intensified temperatures, per Deutsche Welle.

Yale Climate Connections (YCC) also explains why "a couple of degrees makes a profound difference." Among the effects: In a 3.6 degrees F warming scenario, about 37% of the world's population will face severe heat waves at least once every five years (which raises the risk of heat-related illness and death).

In another article, YCC explains that for every additional tenth of a degree increase, warming may affect 100 million people. This article draws from a recent paper in Nature Sustainability that examines how people may suffer "unprecedented heat" in different scenarios.

"Global heating of even [2.7 degrees F] is not considered safe, [and] every additional tenth of a degree of warming will take a serious toll on people's lives," echoes the World Health Organization.

Other impacts

Extreme heat is only one of the effects of a few degrees of change that NASA summarizes in its multimedia feature "A Degree of Concern."

Other effects include reduced water availability, extreme precipitation (and weather events), impacts on wildlife, and damage to forest and ocean

ecosystems.

So, is there hope?

If every tenth of a degree of increase matters to millions, every tenth avoided has a huge impact.

So, everything we do to reduce warming is important. As the paper in Nature Sustainability concludes, there is “huge potential for more decisive climate policy to limit the human costs and inequities of climate change.”