

# E&E NEWS

## WATER

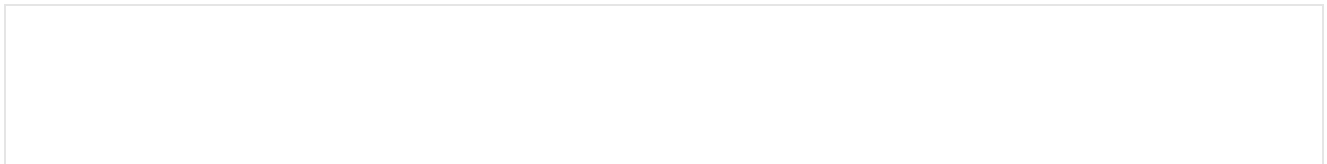
### **5 Billion People Will Face Water Shortages by 2050, U.N. Says**

The World Meteorological Organization warns that climate-related shortages in water resources could affect two thirds of the world's population by midcentury and will be felt unevenly

By Daniel Cusick, E&E News on November 30, 2022



General view of the Imja glacial lake controlled exit channel in the Everest region of the Solukhumbu district, some 140km northeast of Kathmandu. Formed in the shadow of Mount Everest, the turquoise depths of Nepal's Imja glacial lake would be a breathtaking miracle of nature to behold, were they not a portent of catastrophic floods. Credit: Prakash Mathema/AFP via Getty Images



Five billion people, or around two-thirds of the world's population, will face at least one month of water shortages by 2050, according to the first in a series of United Nations reports on how climate change is affecting the world's water resources.

The assessment from the World Meteorological Organization, released Tuesday, includes projections about river flows, floods and droughts on every continent. It offered a mixed bag of findings, but warned that water security would become increasingly uneven across the world. Some places, such as Brazil's Rio São Francisco basin, face a challenging future; others, including the Great Lakes region of the United States, are in better shape.

“The impacts of climate change are often felt through water—more intense and frequent droughts, more extreme flooding, more erratic seasonal rainfall and accelerated melting of glaciers—with cascading effects on economies, ecosystems and all aspects of our daily lives,” WMO Secretary-General Petteri Taalas said in a release. “And yet, there is insufficient understanding of changes in the distribution, quantity, and quality of freshwater resources.”

The 36-page report “aims to fill that knowledge gap and provide a concise overview of water availability in different parts of the world,” he added.

The findings also will help guide climate adaptation and mitigation investments and inform the United Nations' campaign to provide universal access to early hazard warning systems for climate disasters such as flood and drought.

As with other climate change phenomena, there will be losers and winners, the authors wrote, though, “Overall, the negative trends are stronger than the positive ones.”

In the United States, for example, persistent drought is projected to take an even larger toll on water security in the West. But the Great Lakes region will see relatively high water security due to the region's proximity to five of the world's largest freshwater lakes.

Other regions projected to have above-average water storage capacity in 2050 include the Niger basin in West Africa, the East African Rift and the northern Amazon basin, scientists said.

Conversely, the report identified several global “hotspots with negative trends” on water storage, including Brazil's Rio São Francisco basin, Patagonia in the southern reaches of South America, the Ganges River headwaters in the Himalaya Mountains of northern India and the Indus River flowing from Tibet to the Arabian Sea.

Researchers said rapid snow and ice melt in high-elevation regions is having “a significant impact” on global water security, as does heavy use of groundwater for irrigation, a problem compounded by drought and the shrinking surface reservoirs.

Another key finding was that the global area with below-average stream flow in 2021 was roughly double the size of the global area with above-average stream flows, based on 30-year hydrological averages. Scientists attributed the 2021 conditions to both climate change and a La Niña event, an atmospheric oscillation pattern characterized by wide water temperature variation in the Pacific Ocean.

Between 2001 and 2018, the United Nations reported that 74 percent of all natural disasters were water-related—prompting participants at the recent U.N. climate conference in Egypt to further integrate water into adaptation efforts. Officials said it is the first time water has been referenced in a COP document recognizing its critical importance.

*Reprinted from E&E News with permission from POLITICO, LLC. Copyright 2022. E&E News provides essential news for energy and environment professionals.*

---

## **ABOUT THE AUTHOR(S)**

**Daniel Cusick** is a reporter for *E&E News*.

### **Recent Articles by Daniel Cusick**

We Need New Warning Systems to Save Lives during Climate Disasters

Global Internet Connectivity Is at Risk from Climate Disasters

Ancient Roman Concrete Has 'Self-Healing' Capabilities

---

### **Recent Articles by E&E News**

IPCC Report Will Likely Shake Up U.N. Climate Talks

Climate Change Is Destabilizing Insurance Industry

We Need New Warning Systems to Save Lives during Climate Disasters

Scientific American is part of Springer Nature, which owns or has commercial relations with thousands of scientific publications (many of them can be found at [www.springernature.com/us](http://www.springernature.com/us)). Scientific American maintains a strict policy of editorial independence in reporting developments in science to our readers.

ALL RIGHTS RESERVED.