FOOD & WATER WATCH

# Water In Peril:
## Climate Change to Exacerbate Water Woes

**Climate-altering greenhouse gas emissions from our energy and food systems pose serious risks to our water infrastructure and freshwater resources. The United States is a major contributor to climate change through fossil fuel emissions and agricultural production. Globally, natural disasters have increased significantly since 1980.[1] These events can curtail freshwater supplies, and our water systems are aging and unprepared to meet the challenges associated with climate change-fueled natural disasters. Hurricanes can take systems completely offline.**

Mitigating the worst effects of climate change will require fundamental, systemic transformation. A first step would be rapidly decarbonizing our grid so that we can hit net-zero global emissions by 2050, which requires a transition to 100 percent renewable energy. We must also make significant changes to our agricultural system.[2]

## An Infrastructure Emergency

Weather disturbances can cause water system disruptions, including a pause in operations, loss of supply or restrictions on water use, and degraded water quality.[3] These increased weather events have been catastrophic to water infrastructure. Flooding and sea level rise further threaten systems and can force infrastructure relocation; heavy rainfall leads to more sewage overflows; and the total cost of climate adaptation for our water and sewer systems is high, nearing $1 trillion by 2050.[4]

More frequent and intense droughts will cause water shortages, leading to overreliance — and possible depletion of — groundwater supplies, which can impact utilities.[5] Our outdated water infrastructure, which was built based on the more stable weather patterns of the past, is unprepared and overwhelmed in the face of these challenges.[6] Without federal support, these changes will likely increase water service rates for customers, due to extremely high costs for utilities to become climate resilient.[7]

## Freshwater Under Threat

Already, in part due to climate change, an estimated 80 percent of the world's population is faced with water insecurity, meaning lack of access to affordable, safe, clean drinking water.[8] An estimated 1.3 billion people suffer from outright water scarcity[9] — the lack of sufficient water resources to meet demands.[10] Climate change will deepen this water crisis.[11]

A quarter of the population is under "extremely high" water stress, meaning that water withdrawals for industry, agriculture and municipal uses exceed 80 percent of annual available supplies.[12] In 2013, the U.S. Government Accountability Office surveyed state water managers and found that 80 percent of respondents anticipated water shortages to occur sometime in their state "under average conditions" by 2023.[13] The freshwater supplies in Arizona, California, Colorado, Nebraska and New Mexico are significantly stressed.[14] New Mexico faces significant water stress that is comparable to that of the United Arab Emirates.[15]

Moreover, climate and freshwater systems are complexly interconnected.[16] As the Intergovernmental Panel on Climate Change has explained, "Any change in one of these systems induces a change in the other."[17] Climate change will intensify prolonged drought conditions, decrease freshwater availability and hinder groundwater recharge.[18] Water utilities can suffer under these conditions, especially those that depend on groundwater.[19]

Warmer temperatures combined with increasingly extreme storm events and droughts will lead to more water pollution.[20] Heavy and intense rainfall events create more storm runoff that can contaminate surface waters.[21] Glacial melting causes sea levels to rise, which increases saltwater intrusion in many freshwater sources, thereby reducing the amount of drinkable water.[22] Rising ocean temperatures will lead to more rapid evaporation.[23] And algal blooms from agricultural pollution that threaten safe drinking water are exacerbated by climate change.[24]

## Conclusion

We must make enormous cuts in our greenhouse gas emissions in order to avoid the most severe impacts to our most essential resources. Climate change has already begun to impact freshwater resources across the globe. The call for genuine, emissions-free renewable energy dates back nearly 50 years. We need a New Deal-scale green public works investment to drive the rapid transition to clean energy.

Climate change threatens our freshwater supplies and the functioning of our critical water services. We need all levels of government to work together to tackle this crisis and protect our water resources.

### *Recommendations:*

- **Create a water trust fund to fully fund our public water infrastructure.** One model is the Water Affordability, Transparency, Equity and Reliability (WATER) Act in Congress. Without delay, we must fully fund our water infrastructure to make water safe, affordable and accessible for all.
- **Build more resilient water infrastructure.**
- **Protect our water as a public trust.**

## Endnotes


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18 *Ibid*. at 175, 176, 178 and 185; Pacific Institute and UN Global Compact. "Climate Change and the Global Water Crisis: What Businesses Need to Know and Do." May 2009 at 2.

19 *Ibid*.

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