

Another disaster is ready to catch the US unprepared: Drought

Enlarge / Dry years are ahead.

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As the Colorado River slowly dwindles, groundwater resources are depleted, and wells are being dug ever deeper, the specter of drought looms in the US—particularly, but not exclusively, in the arid Southwest.

Preparing for gradual changes like these is not sexy or popular. But there is a huge amount of crucial work to be done to mitigate the worst possible outcomes of increasing drought, writes environmental politics researcher Megan Mullin in a paper in *Science* this week. Fragmented water systems across the country have a litany of critical vulnerabilities that will ensure that the worst effects of water scarcity will hit the most vulnerable people in society the hardest.

Crumbling into dust

The Southwest has experienced an abnormally dry period that started back in 2000—an emerging “megadrought” that is due partly to natural climate cycles and partly to anthropogenic climate change. Higher temperatures “increase moisture demand from the land surface,” writes climate risk researcher Toby

Ault in a second Science paper on drought this week, “for the same reason that a sauna will dry out a towel faster than a steam room.” Climate driven changes in the patterns of snow and rainfall can also contribute to drought.

As a result of lower levels in rivers and reservoirs, people have been tapping deeper and deeper wells to access steadily depleting groundwater resources, which are often poor quality—or even unusable—at greater depths.

On top of this, water infrastructure is frequently poor to begin with—and often deteriorating. Drought emergencies are declared regularly in the US, Mullin writes, with water systems sometimes running so dry that it’s “necessary to turn to tanker trucks or even fire hoses to bring water into the community for weeks or months.”

This means that drought is more than a natural disaster in the making: like the coronavirus outbreak raging through the US, it’s a disaster that’s natural in origin but magnified by poor infrastructure and societal fragmentation. There are more than 50,000 water services in the US, 82 percent of which deliver water to fewer than 3,000 people. These small systems face a range of problems, from a lack of funding to smaller staff that don’t have the necessary expertise to manage drought mitigation.

Underfunded water systems are more likely to have drought-exaggerating problems like leaking pipes that waste precious water or emergency lines that have not been maintained. They may also run into financial difficulty if people reduce their water usage because this reduces their revenue streams, Mullin points out. And because society is already spatially segregated along racial and economic lines, the water services in poorer areas are likely to be hit the worst.

Some of the bigger, better-funded water systems are already working hard at preparing for more severe and long-term

droughts. But smaller systems aren't doing the urgent work of gathering data on their current water supply or ramping up their ability to deal with shortages in the future, Mullin writes.

Staving off disaster

One of the most important starting points for building some resilience is gathering data, Mullin argues. We need to know how water systems across the country are financed, what their supply and usage look like, and the state of their infrastructure. Dealing with funding problems and moving away from a system that relies on local funding to prop up water systems is another important step.

But this will be challenging, since elected politicians “benefit more from disaster response than disaster preparation,” she writes. And that's true of the overarching, slowly moving disaster underlying the drought risk, too. “Cutting CO2 emissions reduces drought risk,” writes Ault. Avoiding “just half a degree” of warming would make a meaningful difference to regional drought risk, he adds—the world would look very different with 2°C of global average warming compared to 1.5°C.

Disaster preparation demands allocation of time and resources to an issue that is not yet kicking down the door. But the world is experiencing first hand what it looks like when warnings of a looming disaster have not been heeded—and with “megadrought” swiftly encroaching on North America, drought preparation is crucial.

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