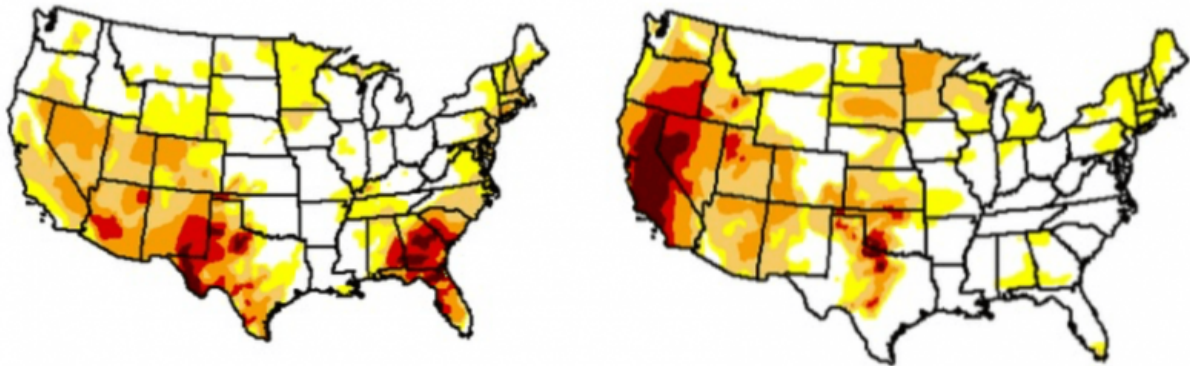


# Why enough water will never be enough for California

May 20 2015, by Doug Parker And Faith Kearns

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US Drought Monitor images from May 2012 (left) and May 2015 (right). Red is 'extreme' drought and maroon is 'exceptional.' Credit: US Drought Monitor

These days, it seems everyone is looking for a silver bullet solution to California's drought. Some advocate increasing supply through more storage, desalination or water reuse. Others propose controlling demand through conservation or restriction of water use by urban and agricultural users.

Rarely do proponents of these single solutions seem to fully appreciate the complexity of California's [water](#) situation.

The fact is that in this large and semi-arid state, water is intimately tied to every aspect of life. Over time, we have consistently increased supplies while reducing demands to support a growing population and [higher levels](#) of agricultural commodity production.

A good rule of thumb to go by when it comes to California drought solutions is "If it were simple, it would already have been done."

To understand California's water situation, one must recognize a fundamental paradox: Enough will never be enough. We are a land-rich but water-limited state, and increased supply leads to more demand, which makes answers to California's water challenges complex, involving a combination of policy, technology and conservation.

## **Consumption paradox**

California is blessed with an abundance of productive agricultural land in a climate that allows us to grow crops that thrive in only a few places in the world. The state's agricultural sector is also its largest [consumers of water](#).

Our abundant water supplies have helped create an incredible agricultural industry that leads the world in production. At the same time, given the size of the state, we will always have more land available to bring into production than we will have water to put on it.

This paradox – that enough water will never be enough – means that efforts to increase supply of water or reduce demand for water will ultimately lead to more agricultural lands being brought into production, more water available for cities to grow, and more water to remain in

streams to ensure a healthy environment. But, eventually, we will face a new drought, and water supplies will again be inadequate to meet the new, higher levels of demand.

There are other arenas where this phenomenon is well understood. For example, when it comes to freeways, congestion leads to demand for more lanes to be built. More lanes temporarily reduce congestion and lead to increased housing construction, and over time, that increased housing construction leads to more congestion. That, in turn, leads to demand for more lanes. This is also true with flood control: better levees lead to safer communities, which cause communities to expand and demand even better levees.

Accepting this fundamental paradox doesn't mean that we should throw our hands in the air and do nothing – and in fact, we aren't. We should be, and are, looking at augmenting supplies and increasing conservation efforts. We need to pursue all of these options in order to have healthy communities, healthy agriculture and a healthy environment.

We also need to recognize, however, that these options will never fully eliminate future scarcity.

## **Uncertainty**

So in the face of its [worst drought in centuries](#), what should California do?

Cities are striving for water independence. With conservation and supply augmentation through desalination and [water reuse](#), the urban sector will continue to become more efficient and independent. This means that future drought will impact cities less, but that cities will also have fewer options to meet statewide [reduction mandates](#).

Agricultural users will also continue to look at conservation and supply augmentation to increase resilience and even expand production. But, because there is a nearly endless supply of land to be brought into production, agriculture will face years of plenty and years of scarcity. For many farmers, this is already a way of life. For others, the lesson is just now being learned.

Meanwhile, environmental flows – that is, water that stays in rivers and streams to benefit fisheries and ecosystems – will also continue to vary, as they always have. But environmental protections must remain. Ecosystem restoration and other environmental enhancement projects may increase the effectiveness of these environmental flows, but eliminating variation in flows is neither desirable nor possible.

Californians have always accepted, and at times even embraced, the uncertain nature of life in this beautiful, diverse state. From the boom and bust of the Gold Rush to a new population living on the fault lines, California's uncertainty is built into our lives. Drought is no different. We will always face times when water is scarce, so we must optimize water use while accepting uncertainty as an integral part of the California lifestyle. There is no solution to drought, only a change in our way of thinking about water and drought.

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