

No 'New' Water

Navigating the Path towards Potable Reuse
as a Means to Augment the Nation's Water Supply

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Policy Issue

- 💧 Water shortage in the western and southern United States due to *population change* and *drought*



Falling water levels at Lake Mead behind the Hoover Dam outside Las Vegas.

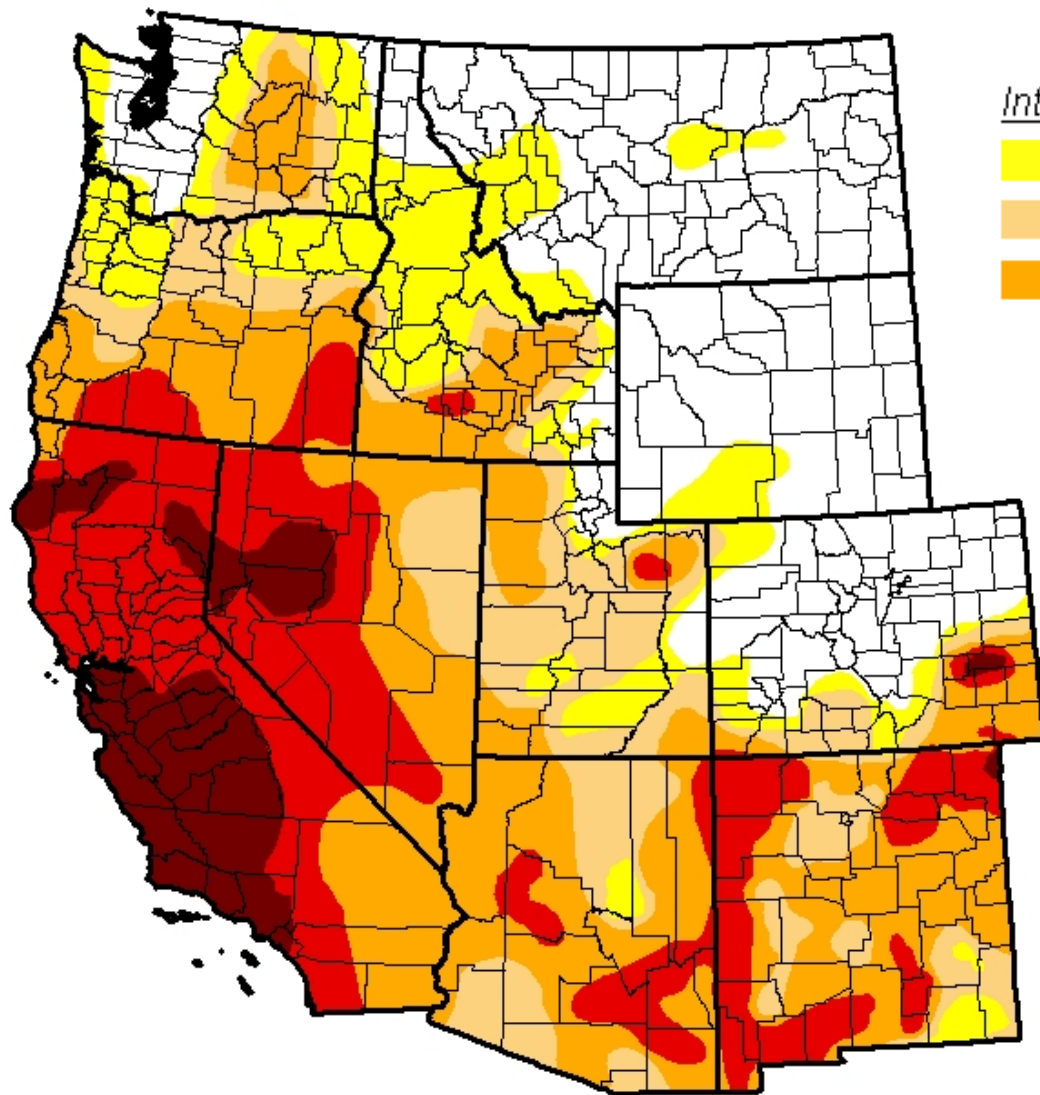
U.S. Drought Monitor

West

July 22, 2014

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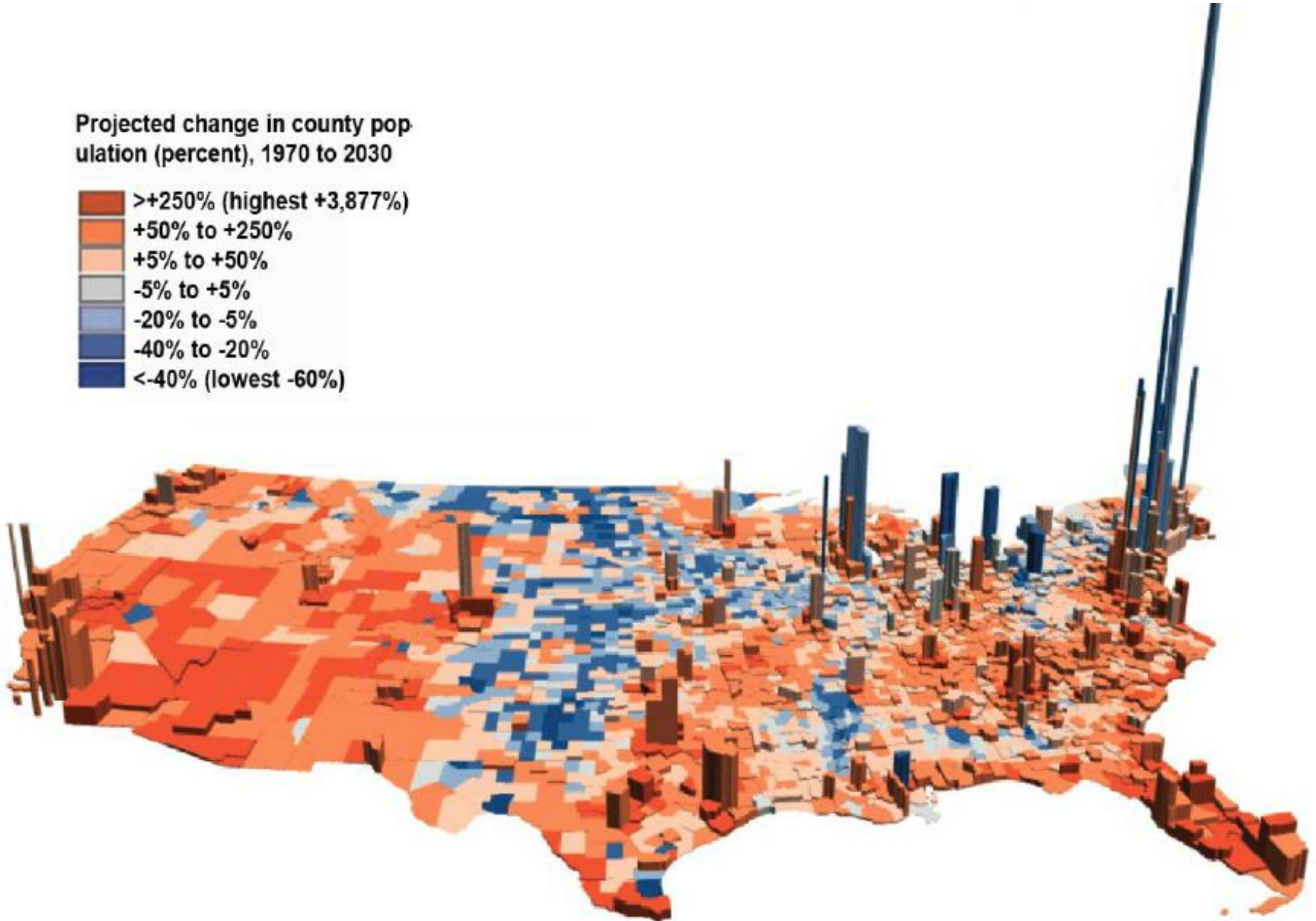


Intensity:



Population Density and Projected Growth (1970-1930)

Projected change in county population (percent), 1970 to 2030



Effects of the issue

- 💧 State of emergency issued in California
 - 💧 For first time ever, the State Water Project and Bureau of Reclamation cannot deliver any water to customers
- 💧 Bad for agriculture business
- 💧 Colorado River is overallocated – reservoirs keep falling
- 💧 Cities in Texas, Oklahoma, and Arizona don't have enough water in local supply to meet reservoir demand

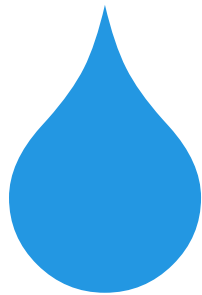
Policy options

- 💧 Conservation – won't be enough
- 💧 Desalination – energy intensive
- 💧 *Recycle more wastewater for potable and nonpotable reuse*
 - 💧 82% of wastewater in Southern California is discharged to ocean
 - 💧 Nonpotable reuse already widely practiced around the country

Additional Water Produced

27%

Increase in Supply for U.S.
Municipal Use



Background on potable reuse

- All water treatment and discharge governed by Safe Drinking Water Act and Clean Water Act
- EPA sets standards for contaminants (chemical and microbial) known to affect public health
- Regulations were not developed with wastewater in mind as the source for drinking water

Potable reuse options

- ◆ Indirect potable reuse
- ◆ Direct potable reuse
- ◆ Is it safe to drink?
 - ◆ With modern water treatment technologies, potable reuse can easily be safe processes.
 - ◆ Indirect reuse already happening in US, and potable reuse safely implemented in other countries



Key issues and concerns

- ◆ Establishing a regulatory framework
 - ◆ To ease public perception and engineering design
- ◆ Public perception
 - ◆ Main impediment – need more scientific consensus
- ◆ Technical barriers
 - ◆ Need more data on treatment technology
 - ◆ Need better real-time monitoring technology
- ◆ Economics
 - ◆ Cheaper than desalination – could decrease overall energy use

Policy recommendations

- *It's a state issue* – let the states figure out their own framework
- *Innovate greater real-time water quality monitoring technology*
 - Task force between EPA, NIST, and industry to recommend funding by NSF and other needed resources
- *Create a pilot program to research potable reuse water treatment processes as they develop*
 - Coordinated by EPA and NIST

Policy Recommendations

- ◆ *Establish federal goals for water reuse in drought-stricken states*
 - ◆ As biggest recipients of federal funds for water-related infrastructure and crises mitigation, these states should be given a top-down command to increase usage efficiency
- ◆ *Create a Water Information Administration*
 - ◆ Congress should enact the WIA to serve as a public clearinghouse and resource center for water usage and production data similar to the Energy Information Administration (EIA)