Drought

in the Intermountain Southwest

Drought has been a persistent factor in the Intermountain Southwest, since 2000. Severe drought conditions, between 2000 and 2004, brought the issue into sharp focus, as the region suffered dramatic declines in surface water supplies, reduced hydropower generation, widespread and severe wildfires, and the hottest streak of regional annual average temperatures recorded by thermometers. Ongoing extreme drought episodes since 2011 fostered the conditions for wildfires of record-breaking extent and severity, further declines in Colorado River and Rio Grande Basin water supplies, and other impacts of concern to regional cities and their residents.

Records of past climate, from tree-rings, tell us that drought periods in the past have been longer and more severe than anything we have witnessed in recorded history. Observations in the recent historical record show increasing temperatures, decreasing soil moisture, decreased snowpack, and earlier snowmelt—all of which point to more severe future drought, in addition to the challenges of ongoing regional population growth. Water management entities, including Denver Water, the Southern Nevada Water Authority, the Colorado Water Conservation Board, and the Bureau of Reclamation, are taking these trends seriously as they plan for the possibility of prolonged severe drought.

KEY MESSAGES:

- Drought is a normal part of the Intermountain Southwest climate.
- Increasing temperatures and population growth have added to drought stress during the last several decades.
- Proactive drought planning is essential for the region's urban areas.

Photos, top to bottom: National Weather Service; Lake Mead, 2002, National Drought Mitigation Center; Elephant Butte Reservoir, 2012 © Zack Guido

Acknowledgements: Funding by Urban Sustainability Directors Network. Narrative created by The University of Arizona and the Western Adaptation Alliance.

FOCUS ON DROUGHT IN (NAME YOUR CITY)

In Las Vegas, drought conditions have persisted…

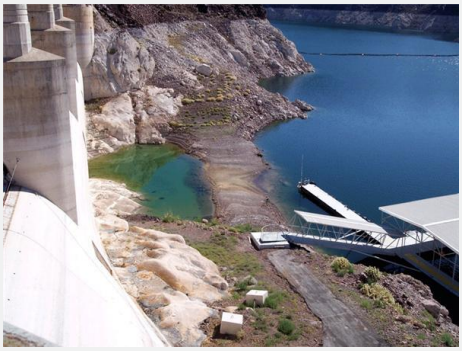

Photo: Dry spillway at Hoover Dam in May, 2004. Credit: National Drought Mitigation Center.

DROUGHT PLANNING

Drought conditions in the late 1970s and early 1980s, combined with a lack of accurate data and knowledge about drought, prompted Colorado's governor to convene a drought task force, charged with developing a drought emergency response plan—at the time, it was one of only three in the nation.

It wasn't until the 1990s that Utah and New Mexico adopted drought plans. The severe and sustained drought of the 2000s prompted states in the Intermountain Southwest to develop new drought plans (e.g., Arizona and Nevada), or update drought plans to be both proactive—mitigating potential disasters—and responsive to drought conditions once they develop (e.g., Colorado and New Mexico). In addition to state drought plans, many regional cities and counties have developed and implemented drought plans.

Seeing is believing! Regional water providers, affected by unprecedented depletion of surface water supplies during recent drought episodes, have developed forward-looking plans to anticipate the combination of population growth and drought-stressed water supplies. Often these plans address multiple future scenarios, in order to develop greater nimbleness and flexibility to deal with drought.

TACKLING THE NEXT BIG DROUGHT

The Intermountain Southwest has been severely affected by multiple droughts in the last 55 years. Over this time, population has grown exponentially, increasing water demand and raising questions about the reliability of regional water supplies. California is now facing the constraints of water demands from a large and growing population, coupled with extensive agricultural water needs, in combination with severe drought. California's situation raises the worst fear of Intermountain West cities—not enough water when we need it. California is having to make tough decisions about how to use their dwindling supplies, how to restrict use, and perhaps most important, where to get that next bucket of water.

Each time we have experienced drought, states, cities and organizations have responded, by developing more thorough drought plans, implementing new water policies and regulations, improving coordination among entities charged with monitoring, planning and response, and coming up with innovative solutions for conserving water and protecting citizens and their property. Each time we have learned, but most times we've learned the hard way—which is costly.

While we cannot stop drought from occurring, Western Adaptation Alliance cities are leading the charge to improve preparedness for drought, so we don't replay the "*hydroillogical cycle*" of panic, emergency response, and apathy—when the next rain arrives—followed by another round of panic and costly impacts. California has been in a more reactive or panic mode, crafting short-term solutions for rapidly emerging drought problems. At some point, the Intermountain West, like California, will need a new bucket of water, and that next bucket may be really expensive. Unlike California, we have the opportunity to calmly prepare, and the more we do to prepare now, the less likely it is that we will have to resort costly, panic-mode strategies.

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