



NEVADA'S GROUNDWATER-DEPENDENT ECOSYSTEMS

Nevada is more dependent on groundwater than most people realize, and we are overusing this valuable resource that supports our wildlife, economy and culture. The status quo is not working, and we need to stabilize the groundwater supply for ourselves and future generations.

Why do we care?

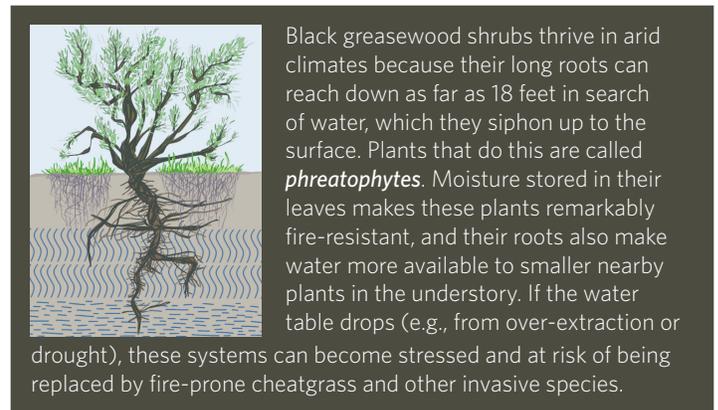
All living beings need water. Averaging less than ten inches of rainfall per year, Nevada is the driest state in the nation, which means we must make every drop of water count.

Much of the precipitation we do receive seeps into the cracks and spaces in soil, sand and rock, where it becomes groundwater. Because it's not visible to us, we often take for granted how groundwater flows underground and feeds our wetlands, lakes, springs, streams, and rivers; replenishes artesian and human-made wells and aquifers, which we rely on for drinking water and to grow food; and sustains ecosystems such as grassy meadows, greasewood-dominated plains (which cover more than two million acres statewide); or mesquite, aspen and other types of forests.

Compared to the rest of the US, which on average receives three times more rainfall, many of Nevada's ecosystems rely on groundwater to meet their needs for moisture, earning the nickname GDEs, short for groundwater-dependent ecosystems.

Over ten percent of Nevada's land by area and almost half of the 350 species found only in Nevada are groundwater-dependent, and in 2015 half of Nevada's counties received over 80% of their water supplies from groundwater.

To learn more, see our StoryMap at arcg.is/qyj0v.



Greasewood illustration © Sarah Byer/TNC

What do we know?

Even with reports of wells and rivers running dry across the state - and predictions that Nevada will become even more "droughty" with climate change, little attention has been paid to the state of groundwater-dependent ecosystems, how they've changed over time, and what impacts future changes will have on wildlife, our culture and economy.

To begin to remedy this data gap, The Nature Conservancy mapped the locations of groundwater-fed wetlands, phreatophyte communities, springs, streams and rivers, and lakes and playas. We also identified and mapped major stresses and threats. We found:

Groundwater withdrawals. 39% of 6500 wells analyzed across the state had significantly falling trends in groundwater, and more than 70% of wetlands, phreatophytes, lakes and playas across the state are at risk of unsustainable withdrawals.



Nevada's major rivers (the Colorado, Humboldt and Truckee rivers) have water in them year-round because they are fed by groundwater © Chip Carroon/TNC

Climate. Of the over 25,000 natural springs, we found that over 10,000 are at high risk for climate stresses, along with 3700 miles of rivers and streams.

Other issues that emerged included the lack of data about impacts to groundwater-dependent ecosystems, and stresses posed by ungulates, non-native species, and development.

What can we do?

With more awareness of the stresses and threats to our groundwater, we can manage for them. We shared these data and findings to identify 10 strategies that, if enacted, could substantially improve future groundwater supplies for our state. *If we act now, we can ensure we have water for a better Nevada future.*

Our 10 Strategies	
SCIENCE/MONITORING	
Strategy 1:	Increase understanding of co-benefits of GDEs, including carbon dynamics
Strategy 2:	Increase monitoring and reporting over space and time
POLICY	
Strategy 3:	Enact policies to reduce current excessive groundwater withdrawals and overappropriation
Strategy 4:	Enact policies to prevent future groundwater withdrawals that would negatively affect GDEs
Strategy 5:	Include requirements for maintaining or protecting GDEs in regulations, codes and laws for land and water management and economic development
MANAGEMENT	
Strategy 6:	Consider GDEs in permitting, guidance and large-scale planning documents to identify and prioritize areas for protection and management of GDEs
Strategy 7:	Increase the pace and scale of restoration of GDEs in time and space
Strategy 8:	Incorporate collaboration to manage and sustain GDEs
EDUCATION/OUTREACH	
Strategy 9:	Increase awareness of the value of GDEs and the need to protect and reduce impacts to them
Strategy 10:	Increase communication about GDEs



Groundwater feeds springs used in hot summer months by animals such as Desert Bighorn Sheep. They can last several days without drinking, but still need reliable water sources to survive. © Andrew Cattoir/NPS

Learn more about the nature of these stressors and threats



Learn more about our strategies to protect GEs

