

Sustainable Waters for Nevada: Ecosystem Considerations

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Colorado River (T. Anderson, TNC)

What is the Nature Conservancy?

Mission

To conserve the lands and waters on which all life depends

Vision

A world where the diversity of life thrives, and people act to conserve nature for its own sake and its ability to fulfill our needs and enrich our lives

The Nature
Conservancy



Protecting nature. Preserving life.

TNC-Nevada

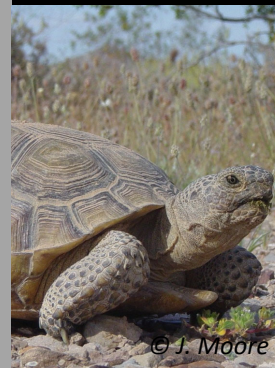
1984

We turned a planned 20,000-lot subdivision into 13,000-acre **Ash Meadows National Wildlife Refuge**



1991

Nevada became the first Conservancy Chapter to **conserve 1 million acres**, largely thanks to our work to save desert tortoise habitat



2006

We began full-scale restoration at **McCarran Ranch** on the **Truckee River**, ultimately reviving >10 river miles for people and nature.



2014

We have been evaluating millions of acres of land in eastern Nevada to guide restoration efforts, supporting **sage grouse** and the state's economy.



2019

We acquired the 7J Ranch at the **headwaters of the Amargosa River** in the Mojave Desert that guarantees water for migrating birds.



TNC-Nevada

Resilient Lands



Resilient Waters

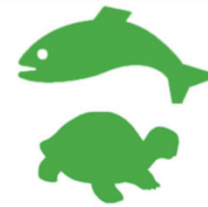
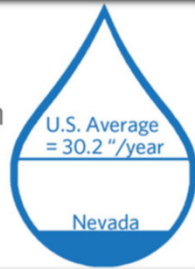


Climate Action



WATER IN NEVADA

Though Nevada's the
DRIEST STATE in the union with
9.5 inches of ~~sun falling~~ ^{sun falling} on average each year,



it ranks
11th
in biodiversity.



The Silver State has more than **300** endemic species
(species found nowhere else)

>40% of them are associated with
WETLANDS and SPRINGS



Nevada's 3 million people



rely on nature
for water.

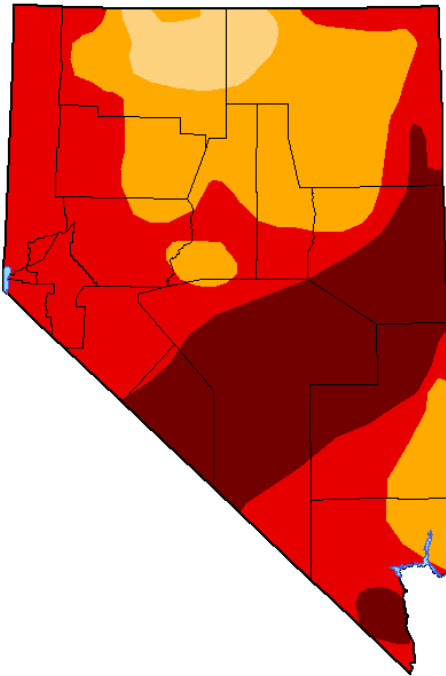


Statewide Precipitation Ranks

September 2020 – August 2021
Period: 1895–2021

U.S. Drought Monitor Nevada

September 21, 2021
(Released Thursday, Sep. 23, 2021)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <http://droughtmonitor.unl.edu/About.aspx>

Author:

Brad Rippey
U.S. Department of Agriculture



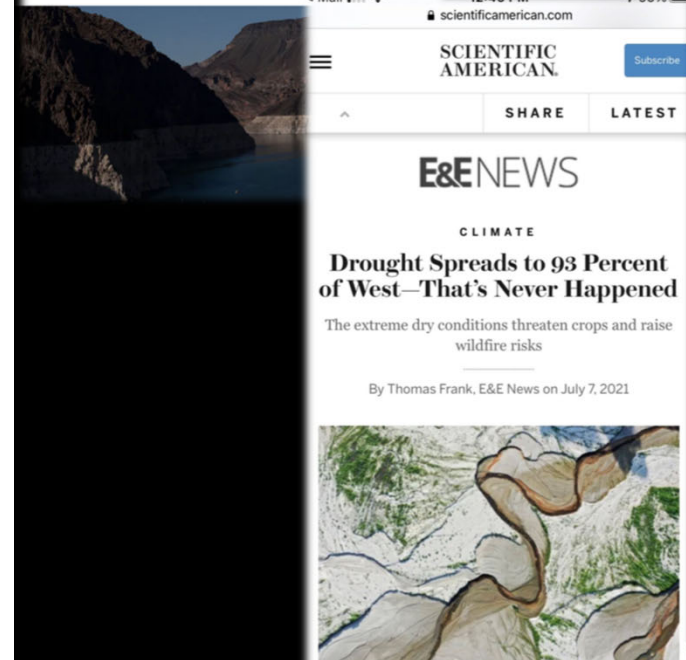
droughtmonitor.unl.edu

Record
Driest
(1)



Capital Weather Gang
Lake Mead reaches lowest level on record amid exceptional drought

It's the least amount of water present in the lake since the 1930s.

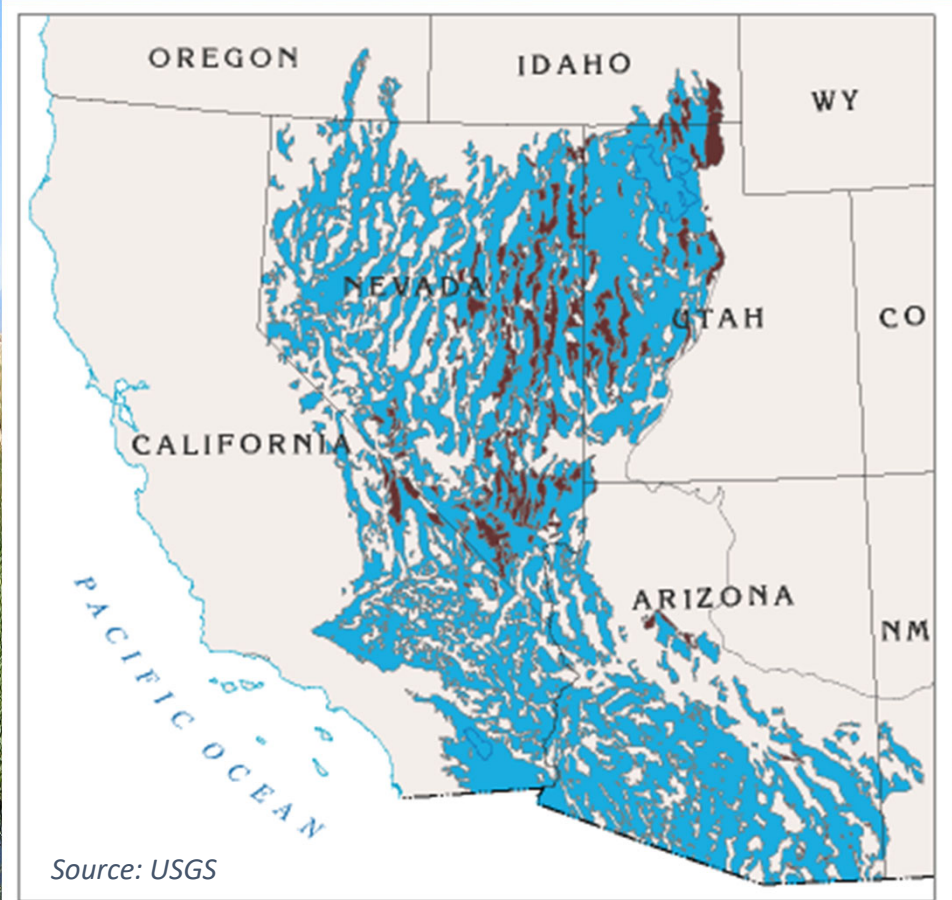


In an aerial view, the San Gabriel River and the exposed lakebed of the San Gabriel Reservoir are seen on June 29, 2021 in J...

Nevada

Big Smokey Valley, NV/J. Johnson (NDNH)

Groundwater-dependent ecosystems rely on groundwater to maintain ecological structure and function



Source: USGS

The Basin and Range aquifers consist of primarily unconsolidated basin-fill sand and gravel, but fractured carbonate rocks also underlie some basins and form important aquifers.

EXPLANATION

-  Basin and Range basin-fill aquifers
-  Basin and Range carbonate-rock aquifers

Hot Creek Pool, NV/J. Johnson (NDNH)

Groundwater complexities

Lag times to impacts
Even longer lags to reversal
Groundwater is underground
Local conditions can be important

Concerns for ecosystems

Surface water-groundwater interactions

Drying of habitat

Warming of habitat

Timing/seasonality of flow or water table fluctuations

Lowering water table below root zone

Torrance Ranch, NV/S. Williams (TNC)

Nevada water law

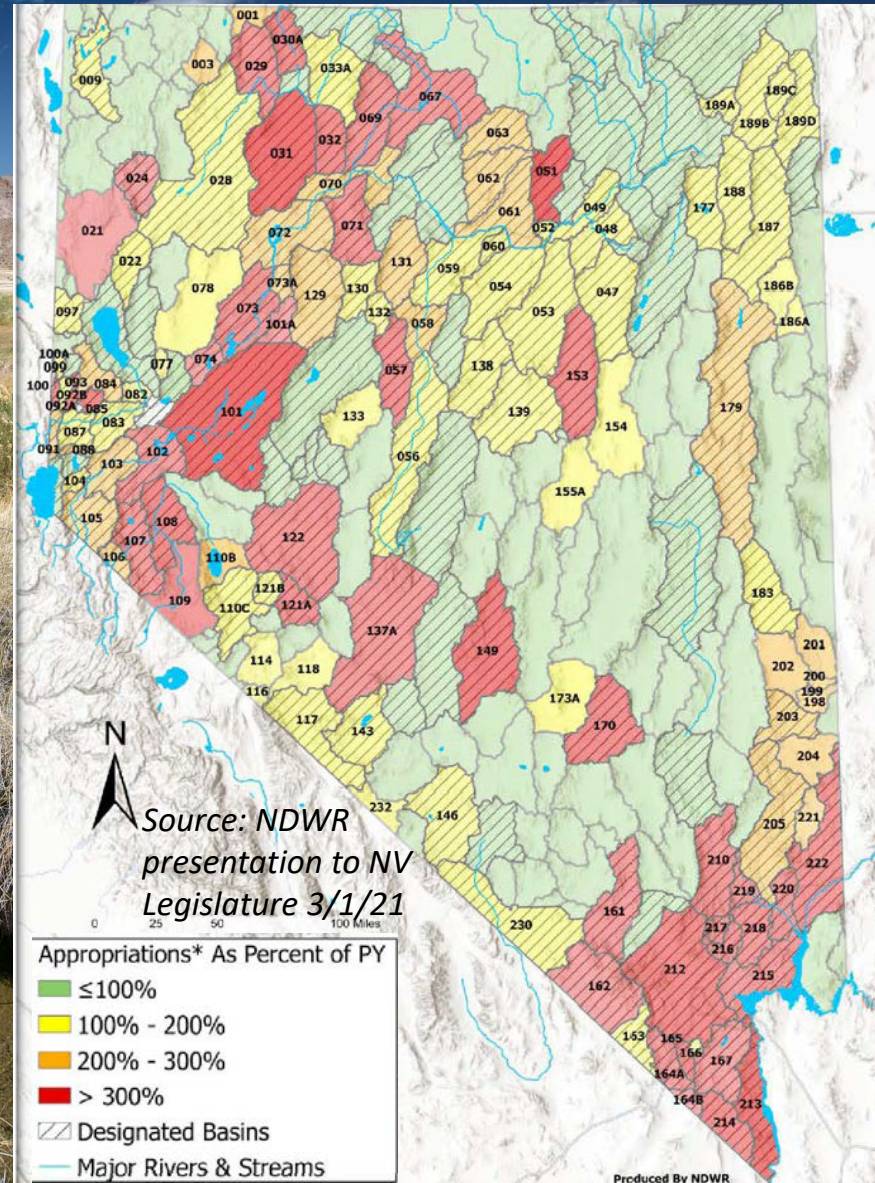
Ecosystems can be first to be affected by water scarcity

Protections for ecosystems are not well-defined in Nevada water law

PY = Perennial Yield

Produced By NDWR
1/5/2021 4:24 PM

* Appropriations are the sum of all permitted, certificated, decreed, reserved, relinquished, revocable, unadjudicated vested claims to groundwater rights, domestic well use commitment, and the groundwater reserve. Taken from a query of the NDWR underground active database, Fall 2020.



Recommendations

Consideration of impacts of water decisions on water-dependent natural systems

Consideration of tradeoffs between promoting beneficial use of NV water resources while protecting the environment and public interest

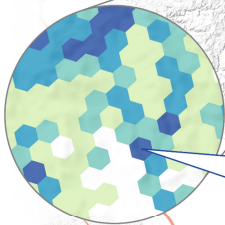
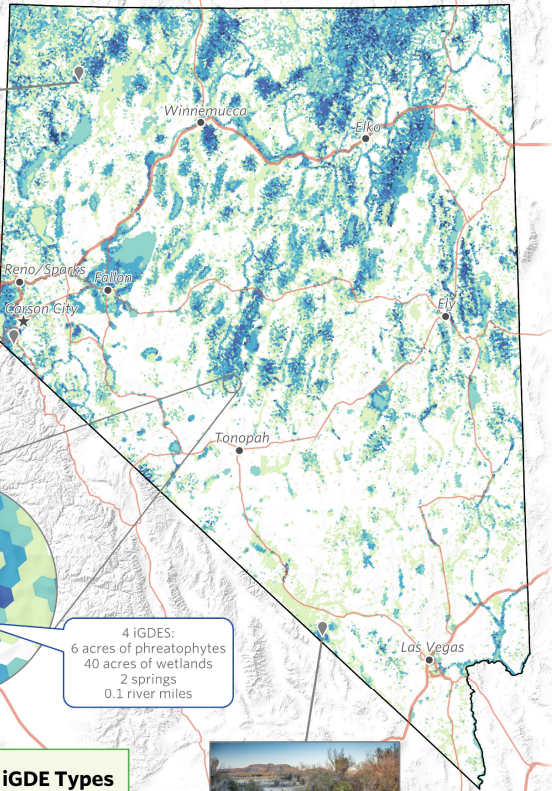
Indicators of Groundwater Dependent Ecosystems in Nevada



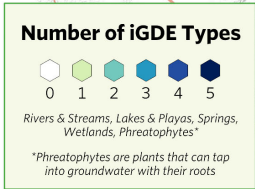
IGDE Phreatophytes: greasewood in Soldier meadows (C. Fichtel/TNC)



IGDE Rivers: Carson River at River Fork Ranch (S. Williams/TNC)



4 IGDES:
6 acres of phreatophytes
40 acres of wetlands
2 springs
0.1 river miles



IGDE Springs: Crystal Spring at Ash Meadows National Wildlife Refuge (S. Williams/TNC)

June 2019

<https://arcg.is/qvj0v>

NV Supreme Ct Commission 2021

Resources from TNC

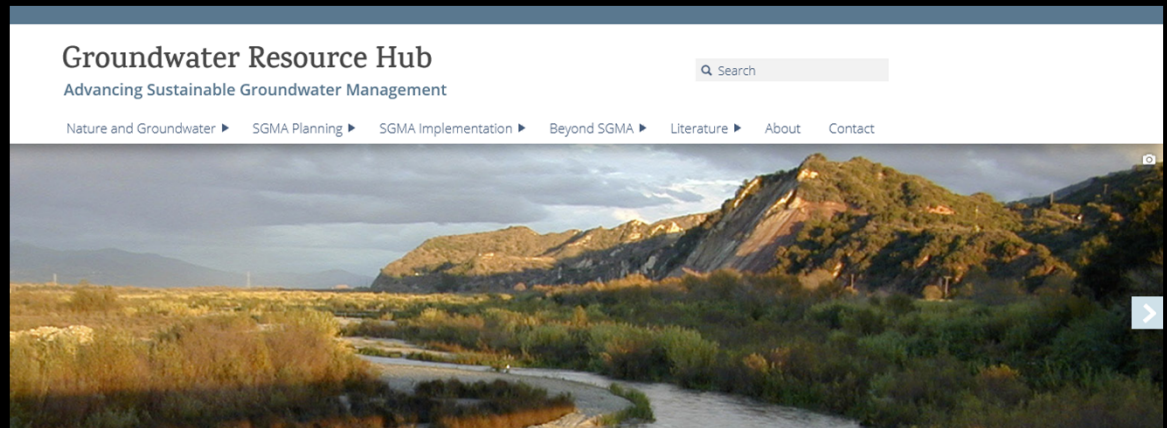
Groundwater

Issue Paper/

Managing Groundwater to Ensure Ecosystem Function

by Laurel Saito¹, Bill Christian², Jennifer Diffley³, Holly Richter⁴, Melissa M. Rohde⁵, and Scott A. Morrison⁶

<https://ngwa.onlinelibrary.wiley.com/doi/full/10.1111/gwat.13089>



<https://groundwaterresourcehub.org>






SPRINGS STEWARDSHIP INSTITUTE

LATEST NEWS

The Springs Stewardship Institute works to improve communication among land managers, to survey, rehabilitate, and steward springs systems.

<https://springstewardshipinstitute.org/>

Additional resources



Nevada Water Resources Association

Nevada
Water
Resources
Association

*"...expanding awareness of Nevada's water issues
through education and community involvement."*

<https://www.nvwra.org>

The Nature
Conservancy
Nevada



Lamoille Canyon, NV/S. Williams (TNC)

Thank you!

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