

Living with Drought

www.unce.unr.edu/drought/

Kerri Jean Ormerod, PhD

Central Nevada Water Authority meeting

January 11, 2018



University of Nevada
Cooperative Extension

2015 Nevada Drought Forum



Former Gov. Brian Sandoval holds a news conference establishing the Nevada Drought Forum

Photo: Chereb-Las Vegas Review-4/2015

**a. U.S. Drought Monitor
Nevada**



September 27, 2011
(Released Thursday, Sep. 29, 2011)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	89.92	10.08	0.00	0.00	0.00	0.00
Last Week 8/20/11	89.92	10.08	0.00	0.00	0.00	0.00
3 Months Ago 6/29/11	97.61	2.39	0.00	0.00	0.00	0.00
Start of Calendar Year 1/1/11	86.83	13.17	0.00	0.00	0.00	0.00
Start of Water Year 8/28/10	4.61	95.39	28.80	0.00	0.00	0.00
One Year Ago 8/28/10	4.61	95.39	28.80	0.00	0.00	0.00

Intensity:
■ D0 Abnormally Dry ■ D3 Extreme Drought
■ D1 Moderate Drought ■ D4 Exceptional Drought
■ D2 Severe Drought

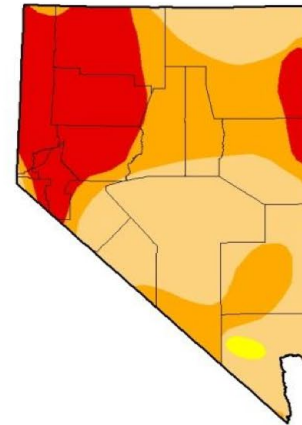
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Michael Brewer
NCCD/NOAA



<http://droughtmonitor.unl.edu/>

**b. U.S. Drought Monitor
Nevada**



October 2, 2012
(Released Thursday, Oct. 4, 2012)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.24	56.51	26.78	0.00
Last Week 9/25/12	0.00	100.00	99.24	56.05	26.78	0.00
3 Months Ago 7/3/12	0.00	100.00	97.54	78.81	11.98	0.00
Start of Calendar Year 1/1/12	18.18	81.82	32.97	0.00	0.00	0.00
Start of Water Year 8/25/11	0.00	100.00	99.24	56.05	26.78	0.00
One Year Ago 10/4/11	89.99	10.01	0.00	0.00	0.00	0.00

Intensity:
■ D0 Abnormally Dry ■ D3 Extreme Drought
■ D1 Moderate Drought ■ D4 Exceptional Drought
■ D2 Severe Drought

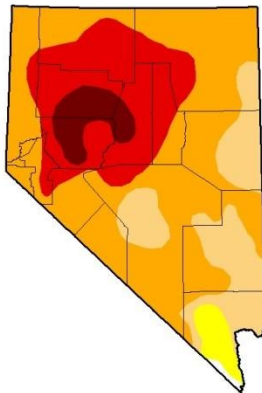
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC

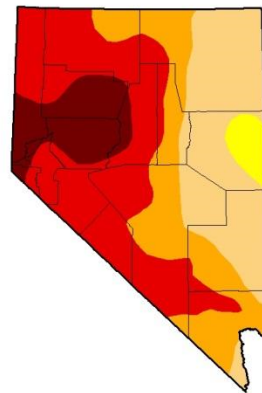


<http://droughtmonitor.unl.edu/>

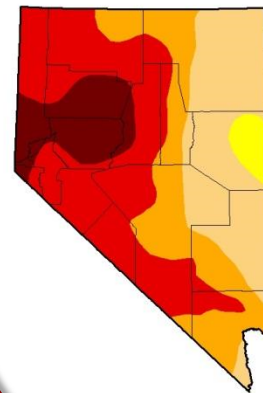
**U.S. Drought Monitor
Nevada**



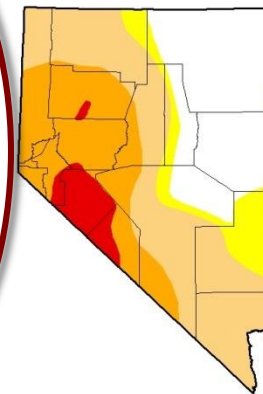
**U.S. Drought Monitor
Nevada**



**U.S. Drought Monitor
Nevada**



**U.S. Drought Monitor
Nevada**



NDF's recommendations

- ① greater water conservation
- ② changing Nevada water law
- ③ improving the state's monitoring and research data
- ④ providing financial and technical assistance
- ⑤ augmenting supplies via water recycling
- ⑥ expanding information sharing and improving outreach
- ⑦ clarifying procedures for declaring drought emergency

Living with Drought

- ① improve Nevada's monitoring, research, and data reporting network
- ② expand information sharing and improve outreach



Search Living with Drought 

Home Drought Basics ▾ Drought Impacts Resources ▾ Data and Tools Drought Expertise Get Involved



Living with Drought

University of Nevada Cooperative Extension

Welcome to the University of Nevada Cooperative Extension's Living with Drought website. Our goal is to connect the citizens of Nevada to essential drought resources, current research, and local drought experts to help address and assess the impacts of drought.

 Latest NV Drought Monitor News

Photo credit: Scotty Strachan

<https://www.unce.unr.edu/drought/>

FIVE TYPES OF DROUGHT

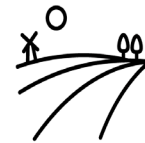
1 **METEOROLOGICAL** drought refers to an extended period of dry weather patterns.



2 **HYDROLOGICAL** drought refers to low water supply in our rivers, lakes, aquifers, and other reservoirs that often follows meteorological drought.



3 **AGRICULTURAL** drought occurs when a water shortage significantly damages or destroys agricultural crops.



4 **ECOLOGICAL** drought is the most recently defined type of drought and refers to ecological damage caused by the lack of soil moisture.



5 **SOCIOECONOMIC** drought refers to when a water shortage affects the supply and demand of drought commodities, such as water, food grains, and fish.





Agriculture and Livestock



Water Management



Nevada's Climate



Recreation



Residential and Landscaping



Wildfire



Agriculture & Livestock

Agriculture producers will find useful information below to help them manage their crops and land during drought conditions, consider alternative low-water-use and rotation crops, and connect with drought assistance programs.

Resources for Farmers and Rangeland Managers

- Nevada Crop Progress & Conditions
- Nevada Rangeland Monitoring Handbook (3rd ed.)
- Drought.gov Agriculture Tools
- Vegetative Drought and US Drought Monitor
- Rangelands and Drought: Mapping an Uncertain Future (USFS)

Drought Assistance Programs and Grant Opportunities

- USDA Drought Programs and Assistance
- RMA Insurance Agent Locator
- FSA Livestock Forage Disaster Program Eligibility Tool
- U.S. Small Business Administration Disaster Loan Assistance

Helpful Publications

Show entries

Search:

Cooperative Extension Publications and Factsheets



Data and Tools



Data

- **Drought Datasets**

- Gallery of Drought Data and Resources (USFS)
- Applied Climate Information System Datasets (Regional Climate Centers)
- Southwest Climate Science Center SCENIC Climate Data
- CCAFS - GCM Downscaled Data Portal (Climate Change, Agriculture, and Food Security data)

- **Real-Time Data**

- Mountain Weather and Climate Lab (Nevada State Climate Office)
- Lake Tahoe and Truckee River Flows & Storage Levels (TMWA)
- Current Conditions at Lake Mead & Lake Mohave (NPS)
- Nevada Current Water Conditions (USGS)
- Real-Time Drought Data (USGS)



Tools

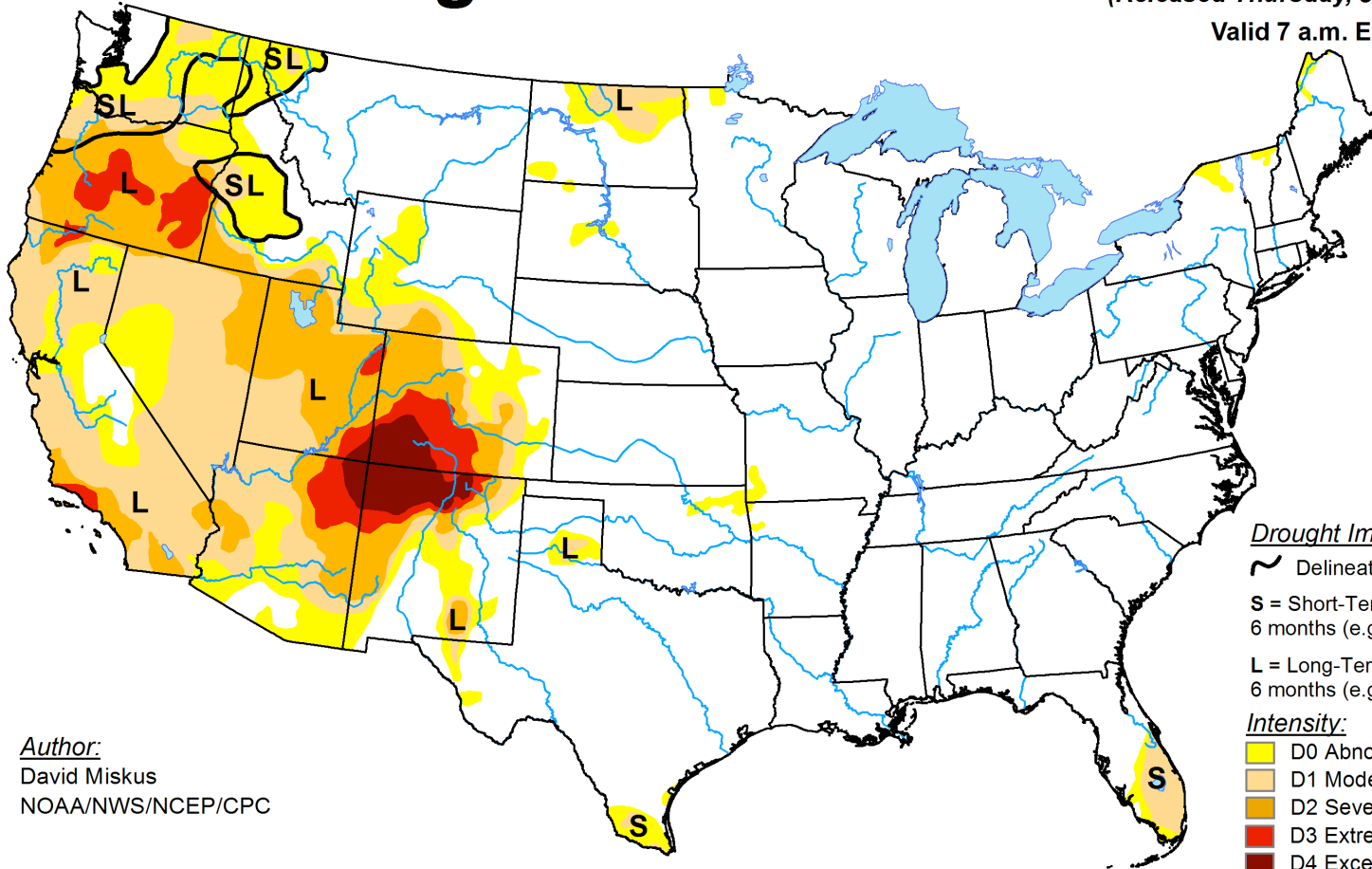
- Drought Impact Reporter (NIDIS)
- Climate Engine (Desert Research Institute)
- Droughtview (University of Arizona Cooperative Extension)
- Drought Risk Atlas (University of Nebraska, Lincoln)
- Interactive U.S. Drought Monitor Map (National Center for Environmental Information)
- AgRisk Viewer (USDA Southwest Climate Hub)
- Rangeland Analysis Platform (USGS, NRCS, DOI, BLM)
- Groundwater Watch (USGS)

U.S. Drought Monitor

January 1, 2019

(Released Thursday, Jan. 3, 2019)

Valid 7 a.m. EST



Author:
David Miskus
NOAA/NWS/NCEP/CPC






Drought Impact Types:

~ Delineates dominant impacts

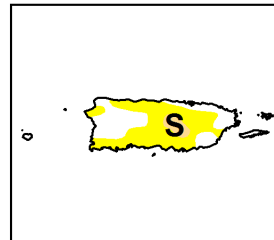
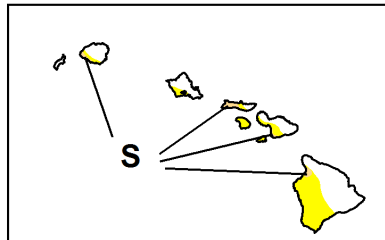
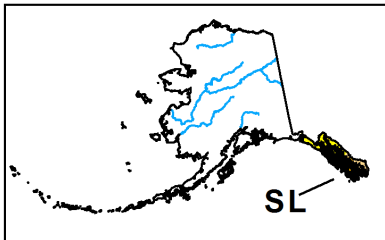
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

-  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. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

SEVERITY OF DROUGHT

PRECIPITATION



SOIL MOISTURE



STREAMFLOW



GROUNDWATER



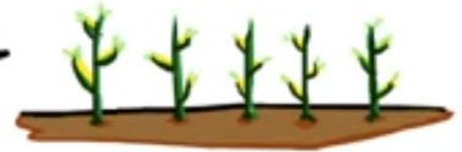
RESERVOIR



ON THE GROUND
REPORTS



AGRICULTURAL
HEALTH



TEMPERATURE



WATER DEMAND



SPECIFIC
GEOGRAPHY



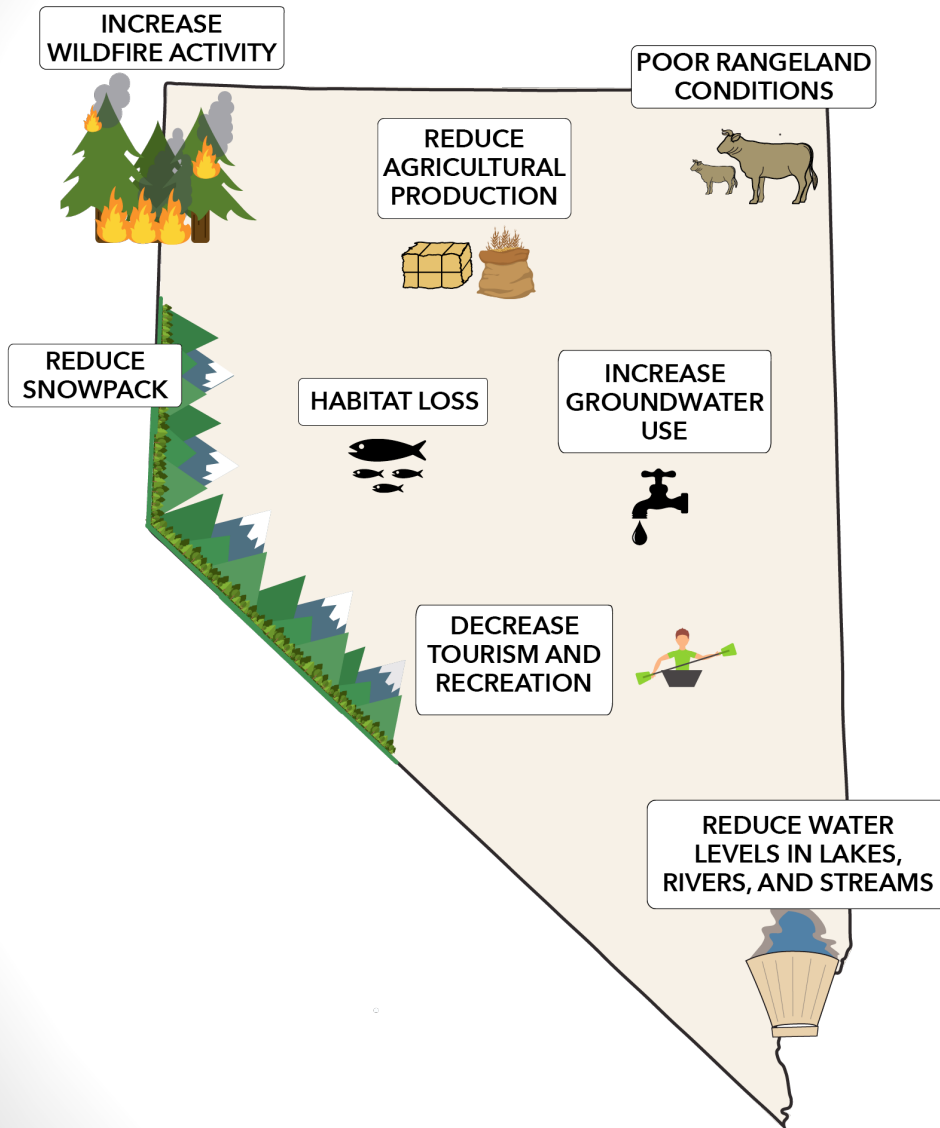
SNOWPACK



Challenges in Nevada

- Nevada has a very sparse hydrological and meteorological data collection network, with very few on-the-ground observations
- Drought impacts are unevenly distributed due to our basin and range topography and highly variable precipitation and laws and policies that govern land and water use

How can drought impact Nevada?



- Drought is often best understood through impacts
- Expansion of local condition reporting can improve the USDM
- Drought Impact Reporter offers a methodologically-consistent database of on-the-ground reports

What can be done about drought?

- Build a network of reliable observers to improve the spatial and temporal resolution of precipitation data
- Facilitate local-scale reporting of drought impacts to support resource managers; Nevada State Climate Office, the authors of the USDM, and others
- Build local, state, and regional connections and partnerships
- Be better prepared to react to drought in Nevada

Get involved

Drought Impact Reporter

Launched in 2005 by the National Drought Mitigation Center and the National Integrated Drought Information System, the **Drought Impact Reporter** is the nation's first comprehensive interactive database of drought impacts. In addition to reporting an impact, you can also view current impacts from stakeholder, government, media and other reports.

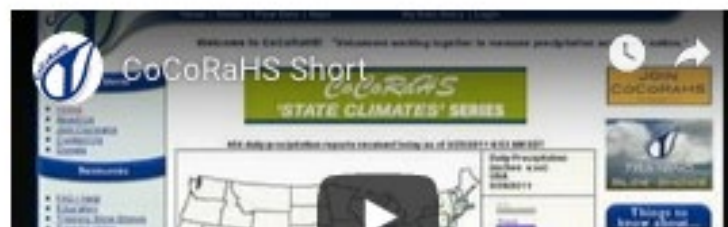
Submit a Drought Impact Report!



CoCoRaHS

The Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) is a community-based network of volunteers who help scientists understand storms by measuring precipitation in their own backyards. What makes this program great is anyone interested in weather and climate, with an enthusiasm to report daily rain, hail, and snow.

What is CoCoRaHS?



Thank you



Kerri Jean Ormerod

Email: kormerod@unr.edu