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## USDA Southwest Climate Hub Bulletin

Resilient working landscapes

*News, research and events for the Southwest Climate Hub (SWCH) region*  
November 2017

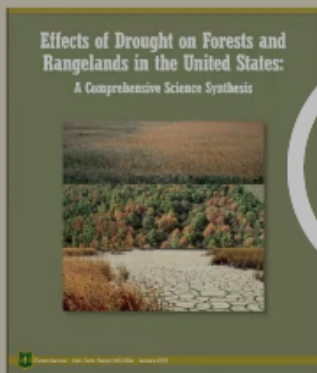
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### What's happening at the Hub


Julian Reyes, Southwest Climate Hub Fellow, gave a webinar on RMA Your Way, highlighting Risk Management Agency crop insurance data by cause of loss and crop from national to county spatial scales. If you missed it, you can see the recorded webinar [here](#) and test the data visualization tool [here](#).

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**Information synthesis / Tool development:**



300-page scientific document



8 regional 2-pagers

<http://www.usda.gov/climatehubs>

Amber Wyndham (NRCS), USDA Southwest Climate Hub 2017 Liaison, presented her work on vulnerability assessments within Major Land Resource Areas using ecological sites. She was part of a larger webinar highlighting NRCS collaboration with the Climate Hub network (presentation starts at 28:45).



Emile Elias spoke about food security, agriculture and water resources in a changing climate at the Climate Change Symposium at Fort Lewis College. Nearly 400 people attended the symposium and talks are posted here (presentation starts at 44:05).

## Western Snow Conference

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SWCH is glad to be part of the team organizing the 60<sup>th</sup> Annual Western Snow Conference. The conference will be held April 16-19 in Albuquerque, New Mexico. Oral and poster presentation deadline is January 31, 2018. More conference information [here](#).

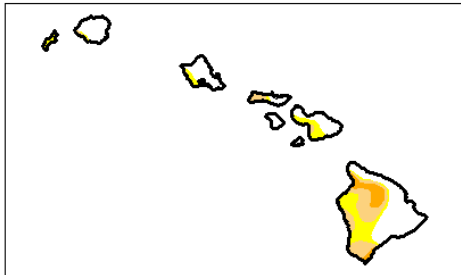
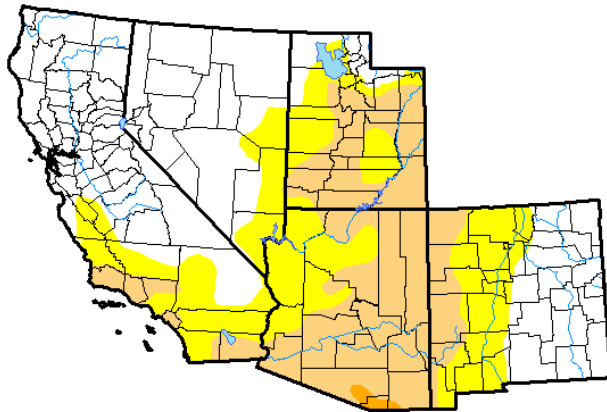
**Current Drought Conditions**

**U.S. Drought Monitor  
USDA Southwest Climate Hub**

**November 28, 2017**

*(Released Thursday, Nov. 30, 2017)*

Valid 7 a.m. EST



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	46.53	53.47	27.21	0.47	0.00	0.00
<b>Last Week</b> <i>11-21-2017</i>	57.71	42.29	14.49	0.48	0.00	0.00
<b>3 Months Ago</b> <i>08-29-2017</i>	83.42	16.58	5.84	0.18	0.02	0.00
<b>Start of Calendar Year</b> <i>01-03-2017</i>	40.37	59.63	31.72	16.38	10.17	4.86
<b>Start of Water Year</b> <i>09-26-2017</i>	72.24	27.76	6.04	0.16	0.03	0.00
<b>One Year Ago</b> <i>11-29-2016</i>	27.32	72.68	37.42	18.55	11.42	5.59

*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.*

*Author:*

David Simeral  
Western Regional Climate Center



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

A weekly map of drought conditions is available at the U.S.Drought Monitor [website](#).

**Excerpt from the National Drought Summary for November 28, 2017**

"During the past week, the warm and dry pattern continued across the Southwest, southern Rockies, and eastern portions of the Intermountain West while northern California, western Oregon and Washington, and the northern Rockies were impacted by several storms that delivered locally heavy rainfall and mountain snow to the higher elevations. According to the Natural Resources Conservation Service SNOTEL network, snowpack conditions are above normal in the following areas: Cascades (Washington), Sawtooth Range (Idaho), northern Rockies (Montana/Wyoming), and portions of the central Sierra (California). Conversely, snowpack conditions were well below normal in the mountain ranges of the Arizona, western Colorado, eastern Nevada, New Mexico, and Oregon. On the map, areas of Moderate Drought (D1) expanded in central and northern Arizona, western Colorado, western New Mexico, and

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moisture is currently rated as 75% short to very short. During the past week, average temperatures were well above normal (5-to-18 degrees) across the region with numerous daily high temperature records broken from California to Colorado."

"In the Hawaiian Islands, one-category improvements were made in areas of Severe Drought (D2), Moderate Drought (D1), and Abnormally Dry (D0) on Kauai. On the windward side of the Big Island and leeward side of Kauai, 3-to-5 inch accumulations were observed this this past week, and average temperatures across the island chain were a few degrees below normal."

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## News

### National Climate Assessment

Earlier this month, the US Global Change Research Program announced the final release of the Climate Science Special Report. The [Climate Science Special Report](#), Volume I of the Fourth National Climate Assessment (NCA4), reports on the physical science of climate change, with a focus on the United States.

National Climate Assessment Public Comment Period ends January 31. To review and comment on the draft NCA4 volume II, please visit [review.globalchange.gov](http://review.globalchange.gov) before Jan 31. To familiarize yourself with the NCA4 and the Review & Comment website please join one of these [webinars](#).

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### La Niña Advisory

Earlier this month we entered La Niña Advisory status with conditions predicted to continue through the Northern Hemisphere during the winter of 2017-2018. For the Southwestern United States, this means that conditions are projected to be slightly warmer and drier than average. Click [here](#) for more information on the El Niño/Southern Oscillation (ENSO) Status.

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### ENSO climate extreme risks?

We like this mapping tool shows risks of seasonal climate extremes related to ENSO. We like this [ENSO Climate Extremes mapping tool](#) from NOAA's Earth System Research Laboratory. The tool shows risks of seasonal climate extremes related to ENSO and you can use it to discover which regions of the U.S. have an increased or decreased risk of extreme warm/cold (or dry/wet) seasons during an ENSO event.

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### **Black gold on the radio**

A recent [radio interview](#) highlights regenerative soil practices to mitigate climate change impacts. Clark Harshbarger, a soil scientist with the [NRCS in Greeley, Colorado](#) describes the four principles to healthy "black gold," also known as "soil."

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### **How are Extension professionals [incorporating climate science and change](#) into their programs?**

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Can [organic agriculture](#) feed the world? A model is used to analyze the role of organic agriculture in sustainable food systems.

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### **What is the future of the [Ogallala Aquifer](#)?**

This month's issue of [Colorado Water](#) showcases the work of the [Ogallala Water Coordinated Agriculture Project](#) and how they are working to support current and future generations of producers in the Ogallala region.

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## **Research**

Since the late 1980s, increases in [Upper Colorado River Basin](#) temperature have resulted in a mean streamflow decrease of 1,306 million cubic meters per year (~7% of mean annual streamflow) (McCabe et al., 2017). As warming continues, the negative impacts of temperature on streamflow will likely become more evident and problematic.

**(American Meteorological Society)**

Recent research from the University of Arizona brings [sobering news for groundwater resources](#) in the Southwest. Senior author Thomas Meixner says that "the portions of the West that are already stretched in terms of water resources — Arizona, New Mexico, the High Plains of Texas, the southern Central Valley — for those places that are already having problems, climate change is going to tighten the screws, ". Access the paper [here](#).

**(Geophysical Research Letters)**

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## Job Opportunity

### USDA California Climate Hub Postdoctoral Fellow

**Deadline: December 15, 2017**

The USDA California Climate Hub in partnership with The John Muir Institute of the Environment at UC Davis have an opening for a Postdoctoral Fellow in climate and water use in perennial crops. This is a two-year position housed at the John Muir Institute of the Environment at UC Davis, Davis CA. The successful candidate will work with a diverse team of researchers at USDA Climate Hubs, Agricultural Research Service, UC Davis, and Lawrence Berkeley National Laboratory. Send completed application package as a single PDF to [steven.ostoja@ars.usda.gov](mailto:steven.ostoja@ars.usda.gov) with Climate and Water Modeling Postdoc in the subject line by Dec 15, 2017.

Application details are available [here](#).

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## Funding Opportunity

### [Beginning Farmer and Rancher Development Program \(BFRDP\)](#)

Beginning farmer education for adult and young audiences in the United States can generally be traced back to the advent of the 1862 and 1890 Morrill Land Grant Acts. But for the first time, the Food, Conservation, and Energy Act of 2008 (Pub .L. No. 110-234, Section 7410) appropriated \$75 million for FY 2009 to FY 2012 to develop and offer education, training, outreach and mentoring programs to enhance the sustainability of the next generation of farmers. The Agriculture Act of 2014 provided an additional \$20 million per year for 2014 through 2018. The reasons for the renewed interest in beginning farmer and rancher programs are as follows: the rising average age of U.S. farmers; the 8% projected decrease in the number of farmers and ranchers between 2008 and 2018; and the growing recognition that new programs are needed to address the needs of the next generation of beginning farmers and ranchers.

[Request for Applications](#)

[Apply for Grant](#)

Closing Date: Thursday, February 8, 2018

Funding Opportunity Number: USDA-NIFA-BFR-006411

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## Meetings

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2017

- [Intertribal Agriculture Council Membership Meeting](#), December 11-14, 2017
- [American Geophysical Union Meeting](#), December 11-15, 2017
- [Tribal / First Nations Climate Change Summit](#), December 13-14, 2017

## Webinars

- [Measurement of ENSO-related climate variables and ecosystem responses in Hawai'i](#), December 6, 2017
- [Using narrative stories to understand Traditional Ecological Knowledge in the Great Basin](#), December 6, 2017
- [It Takes a Village: Augmenting Quino Checkerspot Butterfly in the San Diego National Wildlife Refuge](#), December 7, 2017
- [Climate Change and Cutthroat Trout Conservation in the Southern Rocky Mountains](#), December 7, 2017
- [Climate, Megafires, and Conservation Financing](#), December 11, 2017
- [An Introduction to the Agricultural Air Quality Conservation Measures Reference Guides](#), December 13, 2017
- [An Introduction to the AdaptWest Database for Climate Adaptation Conservation Planning](#), December 14, 2017

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