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*News and research for the Southwest Climate Hub region*  
July 2017

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## USDA Southwest Climate Hub Bulletin

Resilient working landscapes

### Using Ecological Site Information as a Drought Adaptation Tool on Rangelands

Amber Wyndham, soil scientist in the Pueblo Major Land Resource Area office, is working on a one year detail with the USDA Southwest Climate Hub. As an NRCS liaison to the Climate Hub she is working to develop a partnership between the NRCS and the Climate Hub regarding drought impacts on grazing practices in the Southwestern Great Plains (MLRA 69) and Southeastern Arizona Basin and Range (MLRA 41). The objective is to develop a drought vulnerability assessment methodology at the MLRA level that will help landowners and USDA agencies identify and develop adaptation options to mitigate the effects of drought on rangelands. The project will evaluate how ecological site (ES) state and transition models can better convey the effects of drought on rangeland health and improve decision making for selecting management adaptations. The vulnerability assessment will include: (1) a matrix showing how responses to climate variability differ across MLRAs, (2) identification of different vulnerability levels to climate variability based on site characteristics within ES groups and (3) grazing management recommendations and/or adaptation strategies based on ecological sites and climate change. With increased

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detrimental effects of a changing climate at the local level.

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## Congratulations Luana Kiger

Luana Kiger, who was instrumental in the early development of the USDA Southwest Climate Hub, was recognized with [an award from California Department of Food and Agriculture](#). The Southwest Climate Hub congratulates Luana Kiger on her award and her retirement. We are very grateful to Luana for her invaluable guidance and support and wish her all the best for the future!

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## Growing crops in the desert

Native Americans have always lived *with* the land. This short [interview by a Hopi dryland farmer](#) highlights farming techniques.



Credit M. Johnson

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## Dust storms and Valley fever on the rise in the American Southwest

The frequency of dust storms has increased in the past 20 years and can be attributed to warming ocean surface temperatures. Valley fever, a rare fungal infection of the lungs, has been linked to this rise in dust storm activity. The number of cases of [Valley fever in the Southwest has increased](#) more than 800 percent between 2000 and 2011.

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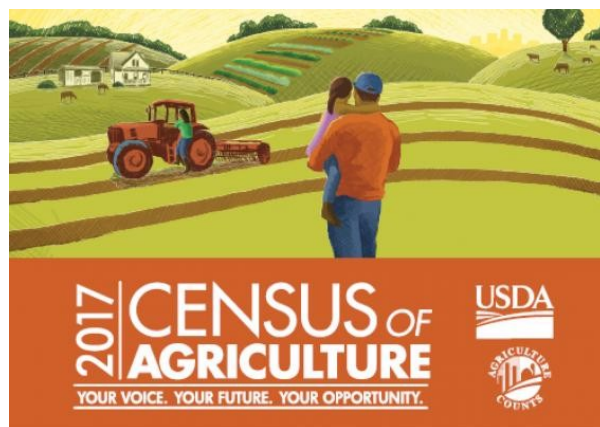
## Extensive, scorching fire season is anticipated with climate change

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## Do you have new research that is useful for decision making?

If so, please consider submitting an abstract to these sessions "[Science to Action: Building Novel and Transformative Partnerships Towards Decision-Relevant Science](#)" and "[Science to Action: Toward More Effective Decision Maker-Scientist Partnerships](#)" at the AGU Fall Meeting, December 11-15, 2017. This public affairs session will continue to build on a rich conversation started at last year's meeting about ways to promote better engagement. Because it is a public affairs session, you can submit to these sessions AND other sessions. Submission deadline is August 2, 2017 11:59 pm EDT.

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Help spread the word about the 2017 Census of Agriculture. Since 1840, the Census of Agriculture has been telling the story of the Nation's farms, ranches and those who operate them. The National Agricultural Statistics Service [invites partners](#) to help spread the work about the Census and how important it is. Watch Sonny Perdue [here](#) explain why the Census is so important. The 2017 Census of Agriculture questionnaire will be available online as well as in hard copy format – take a look at the [demo here](#).

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## Research

### [Economic damage from climate change](#)

The cost of climate change extends beyond environmental damage. It also includes impacts on human health and societal well-being. A recent study in Science found increases in mortality and crime with warming temperatures, in addition to reduced labor supply. The southern tier of the United States will experience these 'costs' which

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(Science)

### [What can tree rings tell us about the Rio Grande?](#)

The amount of rainfall that actually reaches the Rio Grande has been decreasing. Tree ring data from the past 445 years show that recently observed declining trends are unprecedented. Higher temperatures in the area will likely continue reducing runoff and thus water availability for the already dry Southwest.

(Geophysical-Research Letters)

### [Wildfires and climate change in arid riparian ecosystems](#)

Riparian areas are home to diverse species of vegetation, and also provide critical wildlife habitat. A new report from the U.S. Forest Service synthesizes information related to these riparian ecosystems as temperatures warm and hydrologic changes take place.

(US Forest Service General Technical Report)

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## EVENTS

Webinar: [Intermountain West Climate, Water & Drought Assessment](#), July 18, 2017

Webinar: [California-Nevada Drought & Climate Outlook](#), July 24, 2017

[Drought & Tree Mortality in the Sierra Nevada](#), July 25, 2017

Webinar: [Plant Materials Centers Planning and Techniques](#), July 26, 2017

[Soil and Water Conservation Society Annual Conference](#), July 30 - August 2, 2017

[Ecological Society of America Annual Meeting](#), August 6-11, 2017

Webinar: [Managing Cover Crops in an Arid Region](#), August 8, 2017

[Tribal Lands & Environment Forum](#), August 14-17, 2017

[NM WRRRI Annual Water Conference](#), August 15-16, 2017

[Four Corners Adaptation Forum Workshop](#), August 29-30, 2017

[Upper Rio Grande Adaptation Forum Workshop](#), September 6-7, 2017

[Food Sovereignty Summit](#), October 2-5, 2017



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