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Issue 5 of the Southwest Climate Hub Newsletter

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What's Happening at The Hub:

- [Southwest Regional Hub Education Module Being Pilot Tested](#)
- [Will Nevada Have Another Dry Winter?](#)
- [2014 Annual FALCON Conference Recap](#)
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- [Visit to Hamakua Springs](#)

Southwest Regional Hub Education Module Being Pilot Tested

The [Asombro Institute](#) for Science Education has developed curriculum for the SW Regional Climate Hub. The curriculum is about the effects of climate change on the hydrologic cycle. One way of engaging the youth is teaching them through games.



Society for Range Management Annual Meeting

Jan. 31, 2015 - Feb.6, 2015

Sacramento, CA

→ [Find out more](#)

California Rangeland Conservation Coalition Summit

Feb. 3, 2015

Sacramento, CA

In conjunction with Range Management

→ [Find out more](#)

Agriculture and Climate Change: Adapting Crops to Increased Uncertainty

Feb. 15 - 17, 2015

Amsterdam, Netherlands

→ [Find out more](#)

Grazing for Change

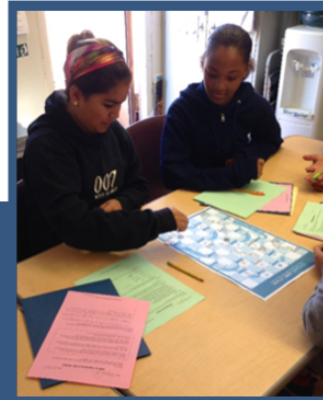
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A student applies water to her evaporation experiment during a pilot test of the Southwest Regional Climate Hub's Water Cycle Unit in October 2014.



Students play the new Streams and Steam board game to learn about the effects of climate change on the water cycle during a pilot test of the Southwest Regional Climate Hub's Water Cycle Unit in October 2014.

→ [Find out more](#)

Preparing for Wildfires: Moving from Crisis to Opportunity

Mar. 10 - 12, 2015

Tucson, AZ

→ [Find out more](#)

California Climate & Agriculture Summit

Mar. 24 - 25, 2015

Davis, CA

→ [Find out more](#)

Climate Prediction Applications Science Workshop

Mar. 24 - 26, 2015

Las Cruces, NM

→ [Find out more](#)

National Association of Environmental Professionals Annual Conference

Apr. 13 - 17, 2015

Honolulu, HI

→ [Find out more](#)

Western Snow Conference

Apr. 20 - 23, 2015

Grass Valley, CA

→ [Find out more](#)

Will Nevada Have Another Dry Winter?

University of Nevada Cooperative Extension Workshops Focus on Drought

University of Nevada Cooperative Extension (UNCE) presented three workshops on the drought in Nevada, held at Cooperative Extension offices in Gardnerville, Fallon and Yerington. Now in their third year, the workshops come at a time when people have been wondering if this winter will be another dry one. *What do experts in grazing, crop management, and irrigation efficiency along with a forecaster with from the Reno Office of the National Weather Service have to say?*

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2014 Annual FALCON Conference Recap

The First American Land-Grant Consortium (FALCON) is a professional non-profit association representing faculty, staff and administration from the 1994 Land-Grant Institutions, made up of Tribal Colleges and Universities. There are 40 Colleges and Universities in the 1994 Land Grant system in 15 states across the US. The [2014 Annual FALCON Conference](#) was held in Minneapolis and attended by over 150 faculty, staff, administration and students from these 1994 Land-Grant Institutions. *What was discussed?*

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Extremes

Two to three years into California's drought is too early to tell if it is the beginning of a mega-drought or if an El Nino will alleviate the situation. However, it is agreed that better decision-making is needed in the Delta. Here's what Dr. Michael Dettinger and Dr. Daniel R. Cayan of U.S. Geological Survey and Scripps Institution of Oceanography recommend in their recent paper published by in San Francisco Estuary & Watershed Science.

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Lightning Strikes Will Increase With Warming

Should the United States expect to see lightening strike more often? David Romps from UC Berkeley believes so. An article published in *Science* journal in November 2014 detailing his study projects an increase in lightning strikes, relative to the increase in temperature, in the continental U.S. The study used independent sets of data for convective available potential energy (CAPE), precipitation and a record of cloud-to-ground lightning flashes. When applied to 11 climate models, it predicts a $12 \pm 5\%$ increase in lightning flashes in the continental US per degree Celsius of global warming, and about 50% over this century. *The article is available to Science subscribers or for purchase.*

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Grant to Let Scientists Monitor Global Warming at UC Reserves

A grant to UC Santa Cruz is allowing scientists to create a statewide "climate change observatory" called the Institute for the Study of Ecological Effects of Climate Impacts (ISEECI). Using a statewide network of protected natural reserves, students and researchers will monitor the impact of global climate change on plant and animal life. *What's their mission & how will California ecosystems be affected?*

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Research Projects of Regional Partners

Central Valley Landscape Conservation Project

[Ongoing project by the California LCC](#)

Modeling Systems to Inform Water Management

[Ongoing project by the Southern Rockies LCC](#)

Linking Forest Landscape Management and Climate Change

[Ongoing project by the Southern Rockies LCC](#)

Climate Modeling for Managing Water Supply

[Ongoing project by the Southern Rockies LCC](#)

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Adaptation in the Great Basin

[Ongoing project by the Southwest CSC](#)



Development, Delivery, and Application of Data on Climate Extremes for the Southwestern United States

[Ongoing project by the Southwest CSC](#)



RECENT NEWS

NASA, NOAA Find 2014 Warmest Year in Modern Record

The year 2014 ranks as Earth's warmest since 1880, according to two separate analyses by NASA and National Oceanic and Atmospheric Administration (NOAA) scientists. Since then, the Earth's temperature has risen by about 1.4 degrees Fahrenheit, a trend that is largely driven by the increase in carbon dioxide and other human emissions into the planet's atmosphere.

→ [Watch the video & read the article here](#)



University of Nevada
Cooperative Extension



Utah State University
COOPERATIVE EXTENSION

U.S. – China Joint Announcement on Climate Change

On November 12, 2014, President Barack Obama and President Xi Jinping jointly announced their respective post-2020 action plans on climate change. These actions are part of the longer range effort to make the transition to low-carbon economies. The U.S. intends to achieve an economy-wide target of reducing emissions to 26% - 28% below 2005 levels by 2025 while China intends is to achieve peak CO2 emissions by 2030, but sooner if possible. *Will this announcement bring momentum into global climate negotiations and inspire other nations to come forward with plans of action?*

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LANDSCAPE
CONSERVATION
COOPERATIVES



NOAA
Regional Integrated Sciences and
Assessments Program



USGS
science for a changing world
Climate Science Centers

U.S. Army Corps of Engineers Releases Climate Change Adaptation Plan

The U.S. Army Corps of Engineers (USACE) recently released the June 2014 Climate Change Adaptation Plan. This plan, prepared in conjunction with the 2014 USACE Strategic Sustainability Performance Plan describes USACE vision, goals, and strategic approaches. It also shares the progress on priority areas, and how USACE plans, integrates, and evaluates measures to adapt to climate change and increase preparedness and resilience.

Get access to the full plan, policy and executive orders.

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Education



Asombro Institute
FOR SCIENCE EDUCATION

EPA Releases Agency-Wide Climate Change Adaptation Plans

In response to President Obama's *Executive Order 13653 – Preparing the United States for the Impacts of Climate Change*, the EPA developed an agency-wide Climate Change Adaptation Plan

Communications



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living documents that will be revised periodically in coming years to account for new data, knowledge, scientific evidence, and lessons from EPA's ongoing efforts to integrate climate adaptation planning into its policies, programs, rules, and operations.

NOAA Assessment Report on Causes and Predictability of 2011-2014 California Drought

According to NOAA's Climate Division data, the November through April winter precipitation season in 2013-2014 was the sixth driest for California since records began in 1895. Records show that the previous two winter precipitation seasons were also dry, and data show that the 2011-2014 three-year average precipitation for California was the second driest on record. *Water resources in California are in a severely depleted state as a result of the multi-year drought.*

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California Small Farm Conference Registration Now Open

Registration is now open for the California Small Farm Conference, which will be held March 7 – 10, 2015 at the San Diego Marriott Mission Valley. Fun field courses and a delicious tasting reception will be offered in addition to the technical workshops.

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Applications Being Accepted for Conservation Innovation Grants

The Natural Resources Conservation Service is currently accepting Conservation Innovation Grant (CIG) applications for up to \$20 million in grants to facilitate the creation of new, innovative markets for carbon credits that provide additional revenue sources for producers to address natural resource conservation challenges. Environmental Quality Incentives Program funds are used to award competitive grants to non-Federal governmental or nongovernmental organizations, Tribes or individuals. Pre-proposals will be accepted for initial review until Tuesday, February 24, 2015 before inviting entities to submit full proposals. To apply electronically, visit <http://www.grants.gov> or contact a local NRCS office.

Visit to Hamakua Springs

by Al Rango

In September 2014, Caiti Steele and I toured the Hamakua Springs Country Farms on the Big Island of Hawaii, and were hosted there by Richard Ha. We visited his small hydroelectric power generating system that provides the required electric power for many of the farm operations. The

The following are external tools & resources, not affiliated with the SW Hub.

- [The California Drought](#)
- [Climate Science Library](#)
- [U.S. Climate Resilience Toolkit](#)
- [Global Climate Change by NASA](#)
- [California Climate Data Archive](#)
- [Rangelands West](#)
- [Tech Resources Pledged to Support Climate Data Initiative](#)
- [California Climate & Agriculture Network](#)
- [Climate Adaptation Knowledge Exchange \(CAKEx\)](#)
- [NCA Videos](#)
- [NCA Impacts - SW](#)
- [NCA Impacts - Hawaii](#)
- [NCA Impacts - Ag](#)
- [Data.gov Food Resilience Theme Datasets](#)
- [Climate.gov NCA Teaching Resources](#)
- [COMET Climate Variability and Change Course Material](#)
- [Climate Change Resource Center](#)

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fuels through shipping which can make the agriculture products very costly.

I was reflecting on energy prices when I went to fill my car with gasoline early this week, especially since I paid \$1.62/gallon for regular gas. When I returned to the office, I googled the current average price of regular gas on the Big Island and found that it was \$3.35/gallon. This is twice what we are paying in NM even though oil prices have plunged! The price of gas on the Big Island indicates high-energy overheads for producers who are tied to using energy generated from fossil fuel combustion.

Using fuels that are shipped to the islands adds to the final cost of agricultural produce that finally appears in the marketplace. Richard prefers using geothermal power as a long-term solution for large-scale power generation on the Big Island. I recommend Richard's blog to you to give you pause for thought if you are looking for innovative solutions. Generating power using renewable approaches is more economical and also reduces greenhouse gas emissions into the atmosphere.

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