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Issue 3 of the Southwest Climate Hub Newsletter

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What's Happening at The Hub:

- [SW Climate Hub Attends Regional Leads Meeting in Colorado](#)
- [SW Regional Hub Education Module Under Development](#)
- [UC-Riverside Working on Urban Climate Change Issues](#)

SW Climate Hub Attends Regional Leads Meeting in Colorado

In September, the Northern Plains Regional Climate Hub hosted a meeting in Fort Collins, of Forest Service, Agricultural Research Service and Natural Resources Conservation Service representatives from the 7 Climate Hubs and 3 Subhubs. Participants shared their programmatic goals and accomplishments and identified areas for collaboration.

The national vision of the USDA Regional Climate Hubs is “robust and healthy agricultural production and natural resources under increasing climate variability and climate change.” Hubs have established cooperative agreements with Land Grant Universities to foster delivery of climate and working lands information to stakeholders across the Nation.

Several hubs will work collaboratively to inventory and then develop tools and apps to support climate adaptation and informed decision-making on working lands. Hubs across the Nation are developing educational materials for various audiences. Collectively, the educational focus spans from elementary hands-on learning to train-the-trainer webinars and learning networks for



UPCOMING EVENTS

Keyline® Practice: Soil Health and Drought-Resilience for 21st Century Farms and Landscapes

October 3-5, 2014

Chico, CA

→ [Find out more](#)

University of California Oak Symposium

November 3-6, 2014

Visalia, CA

→ [Find out more](#)

California Resource Conservation Districts Annual 69th Annual Conference

November 12-15, 2014

Ventura Beach, CA

→ [Find out more](#)

New Mexico's Water Future: Connecting Stakeholder Needs to

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Together, the Hubs will develop a “Vulnerability Assessment of Working Lands to Climate Change” over the next few months. The SW Hub will continue research to identify impacts of climate variability and change on farmers, ranchers, and foresters. Efforts will synthesize research to support informed decision-making and healthy working lands.

Thank you to Sarah Weiner of the Southeast Climate Hub for sharing these photos from the meeting.



SW Regional Hub Education Module Under Development

The Asombro Institute for Science Education is developing a middle and high school curriculum module for the Southwest Regional Climate Hub. In this first year, the focus is on the effects of climate change on the hydrologic cycle. A flexible unit is being created about the hydrologic cycle and water issues that is designed to be 10-days long and can be used in its entirety or can be used in parts, based on the needs of educators in the Southwest.

The unit is comprised of several activities of various lengths. Students will begin by learning about the greenhouse effect and climate change with engaging, hands-on activities. They will then learn about the hydrologic cycle with a paper-ball tossing game and the effects of climate change on the water cycle with a Chutes-and-Ladders-style board game called Streams and Steam. Learners will follow by gaining a better understanding of water availability and issues with more games, experiments, and examination of hydrological and ecological data.

Santa Fe, NM

→ [Find out more](#)

AGU Fall Meeting

December 15-19, 2014

San Francisco, CA

→ [Find out more](#)

AMS Annual Meeting

January 4-8, 2015

Phoenix, AZ

→ [Find out more](#)

Agriculture and Climate Change: Adapting Crops to Increased Uncertainty

February 15-17, 2015

Amsterdam, Netherlands

→ [Find out more](#)

California Climate & Agriculture Summit

March 24-25, 2015

Davis, CA

Proposals for workshops and poster presentations are due on October 3.

→ [Find out more](#)

National Association of Environmental Professionals Annual Conference

April 13-17, 2015

Honolulu, HI

→ [Find out more](#)

Western Snow Conference

April 20-23, 2015

Grass Valley, CA

→ [Find out more](#)



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Mexico. Revisions and more pilot testing will follow, and the unit will be ready for release in spring or summer 2015.

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UC-Riverside Working on Urban Climate Change Issues

Climate change is superimposed on ecosystems that also experience increasing human population growth. University of California-Riverside is located in the central part of southern California, ground zero for urban expansion and climate change. Urban sprawl impacts agriculture as well as diverse wildlands including forests, deserts, shrublands, and grasslands.

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UCR faculty are working on the design of cities to reduce urban heat impacts from Los Angeles to the inland desert cities, and on the effects of increasing temperature and climate unpredictability on human health, agricultural production, water-yielding forests, and other wildlands. To maximize predictability of climate change impacts, they are striving to understand microbial regulation of sources and sinks of greenhouse gases, especially CO2, methane, and nitrous oxides.

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With failure to control or capture these gases, UCR faculty are documenting the impacts, including increasing weed invasions, loss of biodiversity, shifting patterns and composition of vegetation, and increasing fire. These then feed back to increased susceptibility of the region to climate change, and degraded agricultural, forest, and wildland landscapes. From measurements and modeling of emission and sequestration, they are beginning to evaluate practices that improve net capture of greenhouse gases by manipulating vegetation in urban and agricultural lands, and promoting carbon-sequestering forests and wildland habitats.

Key Partners



UNIVERSITY OF CALIFORNIA



RECENT NEWS

U.S. Department of Energy Launches Climate Action Champions Competition

The U.S. Department of Energy (DOE) has launched the first round of the Climate Action Champions Competition, a new effort to recognize and support the path-breaking steps that local and tribal governments are already taking to reduce carbon pollution and prepare for the impacts of climate change. The competition will identify 10-15 communities across the country that have proven themselves to be climate leaders by pursuing ambitious climate action on both tracks: reducing greenhouse gas emissions and building climate resilience.

In addition to earning the Climate Action Champions designation, the selected communities will benefit from facilitated peer-to-peer learning and mentorship, along with targeted support and technical assistance from a range of federal programs. Depending on their

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to extreme-weather preparedness exercises run by the Federal Emergency Management Agency, and assistance in accelerating solar energy deployment through DOE, among other benefits. Each of the Champion communities will also be assigned a coordinator to help identify financial and technical assistance opportunities for their preferred climate strategies.

Applications for the first round of the competition are due October 27. For more information, including the details of a webinar to be held October 9, see this [White House blog post](#) and the [Request for Applications](#).

California Governor Jerry Brown Signs Historic Bills to Regulate Groundwater

California had long been the only Western state with no systematic way to track and regulate groundwater use. With the current record-breaking drought putting unprecedented pressure on California’s groundwater resources, state lawmakers drafted two bills that require local agencies to monitor groundwater use and develop management plans, with the goal of achieving sustainability by 2040. Governor Brown signed these bills into law on September 16, 2014. The groundwater legislation was widely hailed as necessary by natural resources experts, but it was also met with concern by many farmers who were unsure how the new regulations would affect the viability of their operations and communities. The California Subhub will be closely watching the implementation of these laws to determine how to help California farmers make the most of their limited water.

→ [Read more here](#)

UN Climate Summit 2014

UN Secretary-General Ban Ki-moon invited world leaders from government, finance, business, and civil society to attend UN Climate Summit 2014 in New York City and discuss climate action plans. He asked these leaders to bring plans of action that will “reduce emissions, strengthen climate resilience, and mobilize a political will for a meaningful legal agreement in 2015.”

→ [Read more here](#)

New Report Predicts Climate Change Will Significantly Impact California’s Central Valley

Sacramento and San Joaquin River Basins release an Impact Assessment, an important resource in the President’s Climate Action Plan.

→ [Read more here](#)



Education



Communications



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during snowmelt, inter-annual and directional changes in stream water quality, and the impacts on watershed management for wildlife species threatened by disturbance and climate change.

→ [Read more about this project by the Southern Rockies LCC](#)

Improving Crop Coefficients

This study assesses actual crop water use through remote sensing technologies that estimate ET of individual crops within the Middle Rio Grande basin.

→ [Read more about this project by the Southern Rockies LLC](#)

Climate Change, Wildfire, and Forest Ecosystem Services in the USA

This research is an introduction to regional assessments for climate change, wildfire, and forest ecosystem services in the USA. See pages 265 - 268 of *Forest Ecology and Management*.

→ [Read more here](#)

Agriculture & Food Security

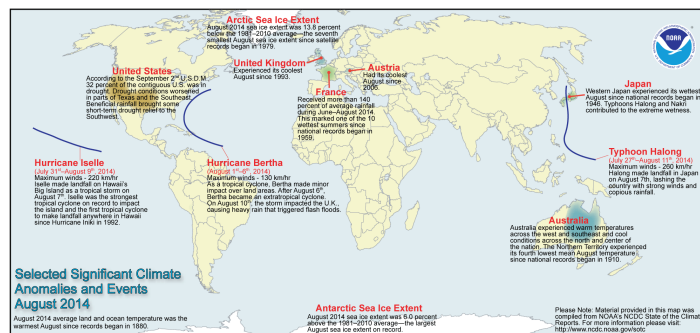
Globally, agricultural and forestry systems are expected to change significantly in response to future climate change, manifesting as major transitions in livelihoods and landscapes. This provides a research agenda for climate smart agriculture.

→ [Read more here](#)

NOAA: Hottest August on Record. Ocean Temperatures Smash Old Record

New data from the The U.S. National Oceanic and Atmospheric Administration shows the Earth recorded its warmest-ever temperature for the June-to-August period — and the trend may continue for the remainder of the year.

→ [Read more here](#)



Click image for a full-sized map

Image Credit: NOAA

Climate Change Research in Support of Hawaiian Ecosystem Management

How will changes in the Earth's future climate system affect the frequency and severity of extreme weather events in Hawai'i?

→ [Read more about this project by the Pacific Island CSC](#)

+ POSITIVE



TOOLS & RESOURCES

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

- [California Climate Data Archive](#)
- [Rangelands West](#)
- [Tech Resources Pledged to Support Climate Data Initiative](#)
- [AZ Monsoon Monitoring Map](#)
- [NM Monsoon Monitoring Map](#)
- [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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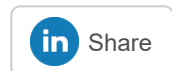
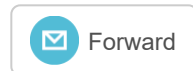
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Historic and Future Conditions in the South Central Climate Science Center Region

Freshwater is vital for humans, fish, and wildlife, but humans are using freshwater more rapidly than it can be replenished.

→ [Read more about this project by The South Central CSC](#)

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