

Volume 1 Issue 1

October 2019

Welcome from our Directors

Welcome to the first newsletter from the North Central Climate Adaptation Science Center (NC CASC) at the University of Colorado Boulder! Over the past year, the USGS recompeted the award to host NC CASC, and CU Boulder was the successful proposer. University Director Jennifer Balch and the entire team at CU-Boulder's Earth Lab, welcomed the USGS team members to our new home and consortium – which includes the Great Plains Tribal Water Alliance, Conservation Science Partners, Wildlife Conservation Society, the University of Montana, and South Dakota State University.

While our location and consortium partners have changed, our mission remains the same – to assist tribal, state, and federal resource managers anticipate and adapt to a changing climate. Funded projects continue, and we expect to be initiating new research with the new team as quickly as administrative processes allow. We are finalizing, after long delay, a strategic science plan that will identify key directions and timelines for NC CASC work. We have also recently launched the Tribal Climate Leaders Program, a funding program for tribal students in our region seeking a Master's degree in climate adaptation science. More information about our teams, consortium partners, strategic plan, and activities can be found on our website: https://nccasc.colorado.edu/

Jennifer Balch, University Director Robin O'Malley, USGS Director





Upcoming Events

Workshop: Climate Impacts and Adaptations for Forests Across Colorado's Front Range Manitou Experimental Forest, CO November 12-14 (This event is invitation-only.)

North Central researchers Imtiaz Rangwala and Brian Miller are providing climate information and facilitating a workshop to forest managers about climate impacts and adaptation for forests across Colorado's Front Range.

Robin O'Malley to Retire

Robin O'Malley, NC CASC USGS Director, has announced his plans to retire at the end of December 2019. Aparna Bamzai-Dodson, currently the USGS Deputy Director, will serve in an acting capacity in the interim.

A celebration for Robin is planned for December 19 in Fort Collins. For more details and to RSVP, please contact Aparna, <u>abamzai@usgs.gov</u>.



















NC CASC Welcomes Research Coordinator, Alisa Wade



The NC CASC welcomes Dr. Alisa Wade to our team as our new research coordinator. Alisa is a conservation planner and scientist, trained at the intersection of physical, ecological, and social science, with a particular interest in bridging the gap between science and management by creating tools and resources for conservation planning. Her research and work revolves around climate change adaptation - for wildlife, people, and ecosystems. Most recently, Alisa worked as a conservation scientist at the University of Montana, overseeing the UM BRIDGES program, and she will retain affiliate

status with the UM Department of Geosciences. UM BRIDGES is a National Research Traineeship centered around the food-energy-water nexus, and Alisa was responsible for developing and delivering graduate curriculum on science communication and bridging science to practice. Alisa also served as a co-author on the Montana Climate Assessment and has broad prior experience as an environmental consultant, an executive director of a not-for-profit land trust, and a post doc investigating salmon distribution and vulnerability under climate change throughout their North Pacific Rim range.

Lolo Peak Fire Field Visit with USGS Soil Scientists

Phil Higuera, University of Montana

USFS Region 1 Soil Scientist Vincent Archer and Nez Perce-Clearwater NF Soil Scientist Alex Rozin joined Phil Higuera in conducting field site visits to the area of the Lolo Peak Fire in southwestern Montana as part of an ongoing study about postfire tree regeneration and associated biophysical variables on the surrounding environment. These efforts are part of two ongoing projects funded by the Joint Fire Science Program. The Lolo Peak Fire was one of the many fires during Montana's recordsetting fire seasons in 2017.



Great Plains Tribal Water Alliance Fall Water Conference 2019

Stefan Tangen, Tribal Resilience Liaison/Consultant to Great Plains Tribal Water Alliance

The Great Plains Tribal Water Alliance held their annual Fall Water Conference from October 10th-11th in Rapid City, South Dakota. In attendance were representatives from NOAA's National Integrated Drought Information System (NIDIS) and the National Drought Mitigation Center, as well as tribal members representatives from the Rosebud Sioux, Flandreau Santee Sioux, Oglala Sioux, and Cheyenne River Sioux. Topics such as drought adaptation, climate change on tribal lands, gold and uranium mining, and water planning were discussed.





Leri R Drought Data Tool Now Available on Comprehensive R Archive Network

Max Joseph, NCCASC-CU team

The NC CASC is happy to announce that the leri R package, which facilitates access to the NOAA Landscape Evaporative Response Index (LERI) data product, is now on the Comprehensive R Archive Network: <u>https://cran.r-project.org/web/packages/leri/index.html</u>

Integrating Federal Priorities with State Fish and Wildlife Priorities

Molly Cross, Wildlife Conservation Society

Shelley Crausbay, Conservation Science Partners

In an effort to support the development of the NC CASC's multi-year Strategic Science Plan, the Wildlife Conservation Society (WCS) and Conservation Science Partners, Inc. (CSP) engaged with individuals from state and federal agencies across the North Central region to better understand the landscape of agency priorities, and how those priorities might benefit from climate science and information. WCS and CSP first conducted interviews with state agencies in the North Central region to better understand which state priorities would benefit from climate science and information. In March, WCS and CSP convened a workshop with the NC CASC to engage federal agencies in the North Central region with an interest in climate and natural resources. This workshop sought to understand how state and federal priorities align, what additional priorities exist for federal

agencies, and where Federal agency efforts may be linked to create added value. Workshop discussions revealed that state and federal priorities align fairly well, with both types of agencies identifying issues concerning water availability and habitat loss as high priorities. The engagement with federal agencies highlighted the importance of adding "wildfire" as a cross-cutting theme to the list of regionallyrelevant priorities. In addition, participants from federal agencies recommended that the prioritization of topics for the NC CASC to support will need to rely partly upon who is willing and able to form partnerships around particular priorities. Finally, federal partners flagged the importance



of working collaboratively to ensure that Federal resources are spent efficiently on projects that are of high value to natural resource managers and other stakeholders. More detailed findings from the workshop can be found in the summary report, <u>https://www.sciencebase.gov/catalog/item/5d51997de4b01d82ce8e1de8</u>

Joint Stakeholder Committee Meeting

Heather Yocum, NC CASC - CU team

Stakeholders from the NC CASC and the USDA Northern Plains Climate Hub met for an in-person meeting in late June in order to: (1) Introduce the Joint Stakeholder Committee to the new NC CASC location and personnel at CU Boulder; (2) Get feedback and input on the Strategic Science Plan, and; (3) Discuss the management issues, priorities, and potential climate information needs for the stakeholders. Minutes from the meeting can be found on our website, <u>https://nccasc.colorado.edu/partners/stakeholder-advisory-committee</u>

Recent Publications

Gravity Recovery and Climate Experiment (GRACE) Storage Change Characteristics (2003-2016) over Major Surface Basins and Principal Aquifers in the Conterminous United States. • Remote Sensing • April 18, 2019 • Gabriel Senay

Long-Term (1986-2015) Crop Water Use Characterization over the Upper Rio Grande Basin of United States and Mexico Using Landsat-based Evapotranspiration • Remote Sensing • July 4, 2019 • Gabriel Senay Ecological water stress under projected climate change across hydroclimate gradients in the north central United States •Journal of Applied Meteorology and Climatology • September 19, 2019 • Imtiaz Rangwala

NC CASC Launches Tribal Climate Leaders Graduate Degree Program

The North Central Climate Adaptation Science Center is seeking applications from students affiliated with the 31 federally recognized tribes in the North Central region (North Dakota, South Dakota, Nebraska, Kansas, Montana, Wyoming, or Colorado) interested in completing a Master's degree at the University of Colorado Boulder on a topic related to climate adaptation science. Full funding is available for a two-year Master's degree program for up to 5 eligible students between fall 2020 and 2022. More information can be found on our website, <u>https:// nccasc.colorado.edu/news/nc-casc-announces-tribalclimate-leaders-graduate-degree-program</u>