



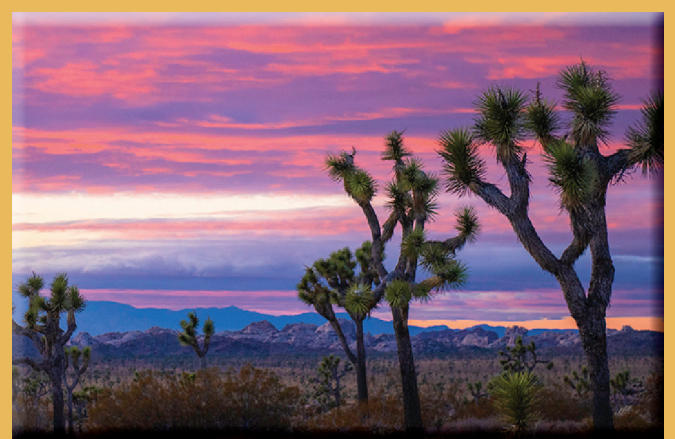
# North Central Climate Adaptation Science Center

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## ***Paper Co-Authored by Imtiaz Rangwala Receives SWCS Award***

A paper co-authored by the NC CASC's Climate Science Lead, Imtiaz Rangwala, was named the 2021 recipient of the Journal of Soil and Water Conservation Editor's Choice Award by the Soil and Water Conservation Society. The Editor's Choice Award recognizes an article of excellence appearing in the A Section of Journal of Soil and Water Conservation in the previous year. The paper, "[Cattle, conservation, and carbon in the Western Great Plains](#)," discusses the state of knowledge of carbon storage potential in rangelands, synergistic opportunities for cattle, conservation, and carbon in the region, and the research needed to advance these opportunities.



## **NC CASC Webinar Series:**

***"How the Resist-Accept-Direct (RAD) framework clarifies the challenge of modern natural resource management and supports strategic, forward-looking action"***

**Thursday, July 8, 2021, 11a -12p MDT**

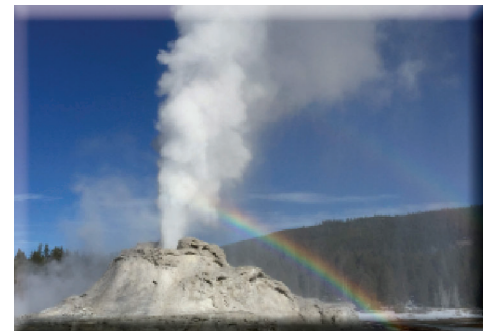
**Gregor Schuurman, Ecologist, National Park Service's Climate Change Response Program**

**Register in advance [here](#)**

**Read the abstract [here](#)**

## ***NC CASC Hiring a Communications Specialist***

The North Central Climate Adaptation Science Center (NC CASC) invites applications for a part-time Communications Specialist. This position will work closely with the NC CASC team to develop communication products that tell engaging stories about the science, education and outreach activities we do to help natural and cultural resource managers adapt to a changing world. Find more information about the position and the application process [on our website](#).



# Upcoming Events

## ***Climate Data 101 in Python Workshop***

***Wednesday, July 28, 2021, 9am-2pm MT***

Are you a resource manager or researcher interested in learning how to work with climate data in Python? If so, the North Central Climate Adaptation Science Center and Conservation Science Partners invite you to register for a Climate Data 101 in Python Workshop. The workshop is designed for federal and state agency employees, university researchers, graduate students, and



others who use climate data to understand global environmental change in their work. We strongly encourage participants to have some prior background using the Python programming language, however prior programming experience is not required.

Workshop attendees will learn how to use climate model data (MACAv2) downloaded from the Climate Toolbox (<https://climatologytoolbox.org/tool/Climate-Mapper>) and Python, specifically rioxarray and xarray, to work with netCDF, csv, and geotiff file formats. More information about the workshop, including registration information, can be found on our [website](#).

## **Join us for the next Joint Stakeholder Committee (JSC) Listening Session**

**Thursday, August 26th, 2021, 9am-11am MT**

The NC CASC and USDA Northern Plains Climate Hub will hold a series of topic-based listening sessions with the Joint Stakeholder Committee (JSC) and their team members. The JSC provides guidance, coordination, and collaboration to these two unique but complementary entities and helps facilitate communication and awareness for federally funded climate research.

The next listening session will be held August 26th from 9:00-11:00am MDT and will be on the future of grasslands management. Dr. Christy Miller Hesed (NC CASC, CU Boulder) and Dr. Toni Klemm (USDA) will be presenting on the vulnerability and management of grassland ecosystems in the Northern Great Plains. The goal of these presentations is to help stimulate conversations among participants about the challenges and concerns of around climate change and grasslands management, as well as adaptation options.



Find more information and register on our [website](#).



## ***James Rattling Leaf, Sr. to Participate at American Water Resources Association Summer Conference***

***Wednesday, July 21st, 2021, 12:30-1:15pm MT***

James Rattling Leaf, Sr. will participate in the panel, "Collaborative Approaches to the Use of Earth Observations in Indigenous Communities," at the American Water Resources Association 2021 Virtual Summer Conference from July 19th-21st. The panel is on Day 3 (July 21st) of the Conference from 12:30-1:15pm. Register [here](#).



## Laura Edwards Featured in SDSU Extension May Drought Hour

NC CASC Consortium Partner, Laura Edwards, South Dakota State University Extension, presented in the SDSU Drought Hour on May 24th where she gave a climate update for South Dakota based on data from the U.S. Drought Monitor. The [SDSU Drought Hour](#) is a series of webinars that discuss drought-related topics throughout each month.



## Read Phil Higuera's Article on Rocky Mountain Wildfires

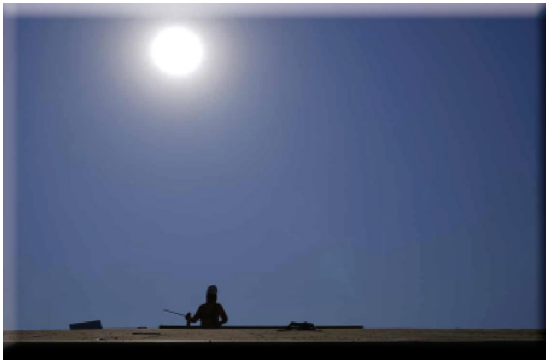
Consortium Partner and PI Phil Higuera, University of Montana, recently wrote an article for *The Conversation*, "[Rocky Mountain forests are burning more now than any time in the past 2,000 years.](#)" The article discusses the record-breaking fire season in 2020 and the methods Phil and his team use to study how wildfires, climate, and forests change over time.



## Imtiaz Rangwala Quoted in *The Guardian* on Recent Heat Wave

Imtiaz Rangwala, the NC CASC's Climate Science Lead, was quoted in an article in *The Guardian*, "[Record-shattering heat wave bakes Western US, raising drought and fire concerns.](#)" on June 18th. Rangwala discusses the implications of drought, heat, and fires, as well as the large-scale ecosystem changes that are already happening in the West as a result of climate change.

*Photo by Ross D Franklin, AP News.*



## USGS Land Treatment Exploration Tool

A new USGS tool, the "[Land Treatment Exploration Tool](#)" was just released as a part of a NC CASC-affiliated project, "[Improving the Success of Post-Fire Adaptive Management Strategies in Sagebrush Steppe.](#)" The project, led by Matt Germino at USGS, quantitatively defined "ecological drought" via precise weather and soil moisture conditions, that were associated with the failure of big sagebrush stands in the Western US. The project translated these findings into a tool that could help guide post-fire sagebrush reseeding decisions on BLM lands. More descriptive research about the tool and research can be found in this [PDF](#).



## NC CASC Tribal Climate Adaptation Newsletters Online

Tribal Climate Adaptation Newsletters contain information relevant to tribal partners and are posted monthly on our [website](#). The [May](#) and [June](#) 2021 newsletters are now online. Interested parties can use [this link](#) to subscribe to the Tribal Climate Adaptation newsletter.

## Watch the Latest Tribal Webinar on YouTube

Watch the latest tribal webinar, "[Tribal Drought Conditions and Actions in the North Central](#)," which discusses the updates and projections on drought conditions in the Missouri River Basin focused on Tribal lands.



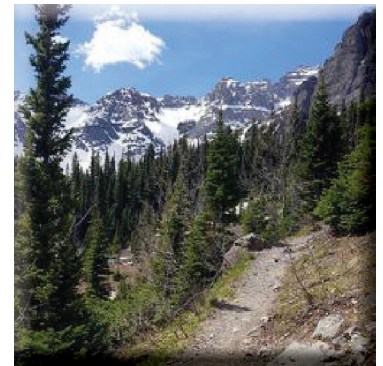
## Recent NC CASC Webinars now on YouTube

In May, Dannele Peck, Director of the USDA Northern Plains Climate Hub, presented "[Grass-Cast: a grassland productivity forecast to inform rangeland management decisions in the Great Plains & Southwest](#)." In June, Owen McKenna at USGS and Ned Wright at USFWS presented "[Integrating Climate Change Projections with Breeding Waterfowl Habitat Models](#)." Recordings of past NC CASC webinars, abstracts, speaker bios, and more about our webinar series can be found on our [website](#).

## Three New Projects Fully Open at NC CASC

Three new projects, all with USGS PI's, are now up and running at the NC CASC. Find information about each project below:

- "[A Climate Vulnerability Assessment Framework for Data-Poor Species](#)"
- "[Public land manager decision-making under ecological transformation](#)"
- "[Climate Science and Adaptation Planning Support for State Wildlife Action Plans \(SWAPs\) in the North Central Region](#)"



## Recent Publications

***Integrating Ecological Impacts: Perspectives on Drought in the Upper Missouri Headwaters, Montana, United States***

April 2021 • Journal of Weather, Climate, and Society • Amanda Cravens, Shelley Crausbay

***Recent Climate Changes Across the Great Plains and Implications for Natural Resource Management***

May 2021 • Journal of Rangeland Ecology and Management • Funded by NC CASC

***Detecting shrub recovery in sagebrush steppe: comparing Landsat-derived maps with field data on historical wildfires***

February 2021 • Journal of Fire Ecology • Funded by NC CASC

***Weather affects post-fire recovery of sagebrush-steppe communities and model transferability among sites***

April 2021 • Ecosphere • Funded by NC CASC

***Campfire conversations at the 2020 Annual Meeting: Insights & Lessons Learned from "Cuss-and-Discuss" Rather Than "Chalk-and-Talk"***

May 2021 • Rangelands Journal • Heather Yocum

***Rapid assessment to facilitate climate-informed conservation and nature-based solutions***

May 2021 • Conservation Science and Practice • Molly Cross