EcoClimate News Southwest

September 2022

Reflections from SW CASC Student Website Manager, Bryson Mineart

The Southwest Climate Adaptation Science Center is excited to announce the public release of our new and improved website! We encourage you to check it out here. Our transition to a new website was no simple task and took several months of work over the past year to get where we are now. The website may be available to the public, but finishing touches are still ongoing. There are several exciting changes planned for the remainder of this year and into next year so be sure to check back!

Thomas Weiss, the Website and Web Content Coordinator for AIRES, played a pivotal role in analyzing content and constructing of the new website. I am a computer science major here at the University of Arizona, so Thomas's guidance was crucial for us to get to where we are today. Initially Thomas and I conducted a website audit where we spent time analyzing and recording every piece of content contained on the old website and used this information to merge, remove, and edit

modernization, accessibility, relevance, and more.

Along with a new website we gained the power to redesign some of our more popular programs and pages. I implore you to check out our new National Resource Workforce Development, the new and improved Southwest Adaptation Forum, and recently finished Southern California Montane Forests page! After countless hours of work, I am proud to say that the new website surpasses the old website in all categories. I hope that visitors to our webpage will be greeted with an aesthetically pleasing and comfortable experience.

Last Chance to Apply for SWAF 2022!

The 2022 Southwest Adaptation Forum will be held at the Indian Pueblo Cultural Center in Albuquerque, New Mexico and will begin in the afternoon of Monday, October 10th, and end in the afternoon of Wednesday, October 12th. A draft agenda can be found on the SWAF website. There will be no fee to attend. Building on work started at the 2018 and 2021 SWAFs, we will further explore topics relevant to adaptation practitioners in the Southwest, such as cultural burning, drought, and ecosystem transformation. View the agenda here.

Travel funding is still available for Tribal members and those who work for Tribal organizations. If you plan to request travel support, please complete this application form by September 15th.

In-person space is limited for this event, so please apply as quickly as you can. You will be notified via email if your application is accepted to attend SWAF 2022 (if so, this application will also serve as your event registration).

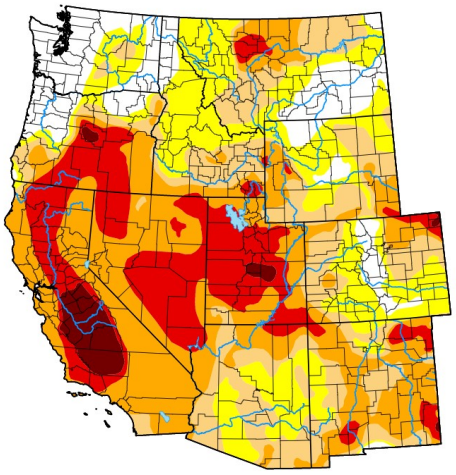
Apply Here!

The SWCASC is pleased to welcome Anissa McKenna as its new Tribal Climate Resilience Liaison! Anissa is a member of the Pascua Yaqui Tribe. She recently completed her Master's degree in Soil, Water, and Environmental Science from University of Arizona. Anissa also received their Bachelor's degree from University of Arizona in Soil, Water, and Environmental Science.

For their Master's thesis, In Vitro Bioaccessibility of Arsenic in Arsenopyrite, Anissa developed novel protocols for anaerobic in vitro analyses of mine tailings related minerals. She has presented her research extensively at regular lab group meetings and multiple conferences. Anissa's broader interests include the interface between environment and society, environmental health disparities, and environmental justice.

Anissa will work with the SWCASC Senior Tribal Liaison to develop and implement a communication, education and outreach program involving tribal governments, schools and communities focused on supporting climate resilience planning and implementation in the Southwest region. She will assist Tribal nations and community stakeholders in identifying local climate research needs and interpretation of locally relevant research findings.

Come Rain or Shine Podcast



Megadrought and Aridity

Megadrought is a term we've been hearing a lot of lately, with, as we find out from one of our guests, somewhat varying definitions. The term megadrought is generally used to describe the length of a drought, and not its acute intensity. A related term, aridity, is the degree to which climate lacks effective, life-promoting moisture. Simply put, aridity is permanent, while drought is temporary. But when drought extends multiple decades, as we are currently experiencing, is it actually aridification? We interviewed two experts in drought and aridification, Dr. Connie Woodhouse and Dr. Mike Crimmins, to talk about these different terms, and discuss the changes they have been observing, and hearing about from managers and ranchers in the Southwest.

Listen Here!

New Fire and Adaptation Online Case Study

The Southwest Fire and Climate Adaptation Partnership's (SWFireCAP) on-the-ground adaptation roundtable has been working to highlight real-world case studies featuring projects that are at the intersection of fire and climate adaptation in order to share transferable lessons learned among the management community and provide useful tools for those working to help ecosystems adapt to changing climate and fire regimes. In collaboration with the Collaborative Conservation and Adaptation Strategy Toolbox (CCAST) Team, the SWFireCAP highlighted its first case study on the Adaptive Silviculture for Climate Change Project in the San Juan National Forest, providing an example of a co-developed project aimed at helping forests resist, be resilient to, or transition to meet the impacts of projected future climate conditions in fire-adapted ecosystems.

SW CASC Researcher Named USU College of Science Dean

Michelle Baker, a principal investigator with the SW CASC, was recently named Dean of the Utah State University (USU) College of Science. Michelle has been serving as the interim dean since 2021. At USU, Michelle is a professor in the Department of Biology and the Ecology Center. Her expertise is in Aquatic and Ecosystem Ecology, and her current research concentrates primarily on excess nutrients and invasive species in aquatic ecosystems. She joined USU in 1999 and became a full professor in 2011. As a researcher with the SW CASC, Michelle has collaborated with resource

and climate adaptation efforts for the Logan River in Utah.

Currently, Michelle is serving as the SW CASC research PI for the Climate Adaptation Science Centers' 2022-2024 Climate Adaptation Postdoctoral (CAP) Fellow's program: Future of Aquatic Flows. This cohort of postdoctoral researchers from across the CASC network will explore topics related to how climate change is changing aquatic flows and in what ways climate can be considered in aquatic ecosystem management. The CAP Fellow from the SW CASC will work on the cohort project titled, "Endangered streams: building strong and authentic bridges between science and practice to understand impacts of future water flows on aquatic ecosystems." Michelle will advise the SW CASC postdoctoral fellow.

The SW CASC extends congratulations to Michelle on her new position and wishes her the best of luck!

Riparian Area Good Predictor of Species Richness

New research funded by the SWCASC and published in *Ecological Applications* investigates the connections between riparian area, fragmentation and species richness (a count of the number of species in a defined ecological community). In this study, researchers used a novel community model to explore predictors of species richness of riparian-obligate and other species of breeding birds in the Great Basin, Nevada. They found that the presence of woody riparian vegetation was the primary predictor of species richness rather than fragmentation. They concluded that the total area of a habitat was a better indicator of species richness, especially when about 25 hectares of riparian vegetation was present in a canyon-level area. In areas with larger amounts of woody riparian vegetation riparian-obligate birds were more

it may be constructive for management strategies to focus on the total habitat area available to breeding bird species rather than fragmentation of habitat patches within a canyon-level area.

Biomass Accumulated Over Decades Lost in Less than 200 Years in Upper Midwest Forests

Photo Credits: Chequamegon-Nicolet National Forest, Corey Ziemann

SW CASC USGS Federal Director, Stephen Jackson (currently on detail as National CASC Senior Advisor on Biodiversity and Climate Change), is part of a team that published new research in *Science*, examining forest cover in the upper Midwest over the past 10,000 years. This research clarifies uncertainties about terrestrial carbon accumulation prior to the industrial revolution and provides evidence that forest biomass and carbon have accumulated over the course of thousands of years. It has only taken the past 150 years of deforestation for this biomass to be lost.

Read More Here!

Fellows' Highlight

Challenges of Communication in a Team Science Setting

Sara Leopold is pursuing a M.S. in Water, Society, and Policy at the University of Arizona. Below are her reflections on the SW CASC Natural Resources Workforce Development (NRWD) Fellowship.

One of the things I was most nervous about when starting my master's program was my lack of background and experience in science. While I have a diverse educational background in studio art and law, I have not taken a science class, nor really engaged with science in any way, since the 9th grade. That being said, my career path of choice, water policy, relies heavily on scientific data for decision-making. Therefore, when the opportunity to apply for the 2021-2022 SW CASC Natural Resources Workforce Development Fellowship was presented to me, I thought it sounded like a great opportunity to learn how to interact and collaborate with scientists.

Read More!

Partner Highlights & Events

Climate Quick Reference Guides

Natural Resources Conservation Service and Southwest Climate Hub recently partnered to produce new Climate Quick Reference Guides for the entire US. The one-page guides, designed to help resource managers plan for the future, can be accessed through an interactive web map

View the Map

CCAST Story map Series on Useful Resources and Tools

Tools & Resources that we can continue to grow (including many case studies and tools from Drought Learning Network partners). As you'll see in the StoryMap, many of these subsections like "Municipal Water Conservation and Reuse" will eventually have their own separate StoryMaps.

View the StoryMap Here!

Climate Change Adaptation and the Tribal Forest Protection Agency Webinar

Hosted by the Southwest Drouth Learning Network (DLN)
Date: *September 13th and 15th*

Learn More

Drought Resilient Agriculture Webinar Series

Hosted by the Southwest Drouth Learning Network (DLN)
Date: *September 15th and 22nd*

More Information Here

Job Opportunity: National Leader for Climate Justice

We are looking for the best possible candidate and have flexibility around duration and schedule (e.g., short-term, part time). Salary is based on a GS-15 pay scale. Location negotiable. This position will be filled through an Intergovernmental Personnel Act (IPA) agreement.

Those interested in this position, should respond with a statement of interest (paragraph) and your resume or CV to Isabella Caltabiano (icaltabiano@usgs.gov) cc Katherine Smith (katherinesmith@usgs.gov) and Emily Brooks (ebrooks@usgs.gov) by September 28, 2022.

Apply Here!

Contact us at:
University of Arizona, ENR2 Building, 1064 E. Lowell St., Suite N441, Tucson, AZ 85721

Subscribe to EcoClimate News Southwest