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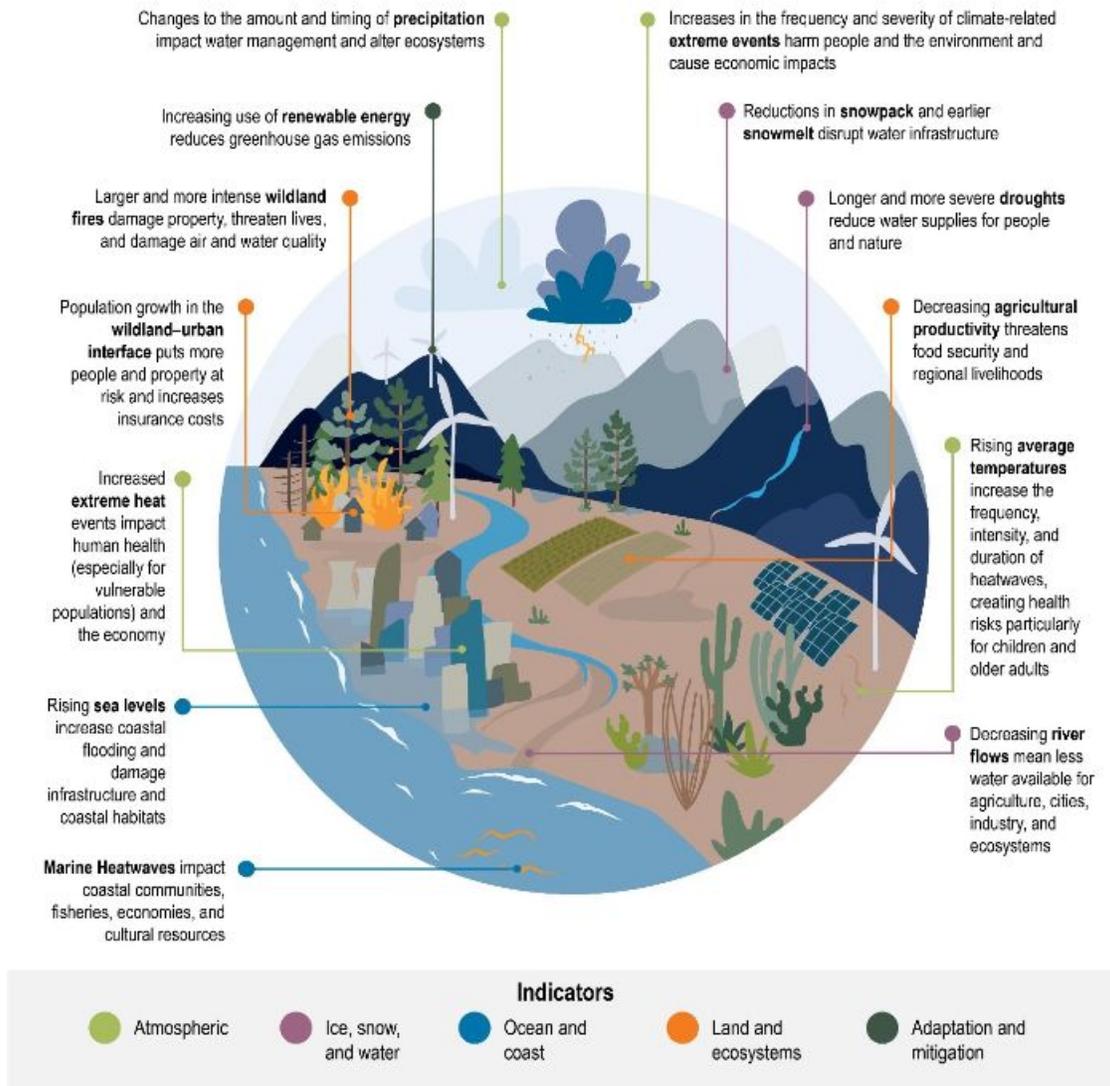
Southwest Climate Hub Bulletin

News and events for the Southwest Hub region

December 2023

Happy Holidays from the Southwest Climate Hub

Our interconnectedness through collaborations, networks, and partnerships supports individual, regional, and broader sustainability. The [Malpai Borderlands Group](#) stands out as a lasting example of people working together towards a common goal. The Fifth National Climate Assessment ([NCA5](#)), released in November, is another example. While more than 750 people served as authors and technical contributors to the NCA5, those authors relied on the research and insights of thousands. The NCA5 is intended for everyone, and this version has elements to engage a broad audience including a Spanish translation of the full report, the first public [call for art](#) with over 800 submissions, companion [podcasts](#), and a [poem](#) written by the 24th Poet Laureate, Ada Limón. It also has the first interactive [atlas](#) to share climate projections. To learn more about [Southwest Chapter](#), register for our upcoming [webinar](#). Also released in November, the [National Climate Change Roadmap](#) identifies national priorities for U.S. climate change research related to working lands over the next decade. While planning for the years to come is critical, food insecurity is an issue now. The [Good Food Collective](#) in Durango, Colorado, and the [Iskashitaa Refugee Network](#) in Tucson, Arizona, featured [here](#), are using connections to fight food insecurity and reduce greenhouse gas emissions. Our connections, through national assessments, visioning roadmaps, agricultural cooperatives, and food gleaning organizations foster sustainability and resilience in the face of climate extremes and change. This holiday we celebrate in gratitude for our connections.



People of the USDA Southwest Climate Hub

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Guillermo Alvarez



Ashley McGuigan



Maria Vicini

Guillermo Alvarez is a life-long resident of the Southwest. His research has been focused on Conservation Ecology, Evolutionary Biology, and Climate Science. Guillermo is a postdoctoral fellow working as an agricultural risk associate with the USDA Southwest Climate Hub in Las Cruces, New Mexico. The focus of his activities is assisting farmers and ranchers to understand losses caused by climate effects in order to improve their response and adaptation to extreme weather variability and climate change.

Dr. Ashley McGuigan serves as the Hawai'i USAPI Coordinator for the USDA Southwest Climate Hub, where she coordinates initiatives for climate adaptation and mitigation among diverse working land producers in Hawai'i and the US Affiliated Pacific Islands. Based in Hilo, Hawai'i, her role involves developing a centralized resource directory, facilitating access and development of grant opportunities, offering tailored technical assistance, and fostering collaborative networks to support under-represented producers. Ashley holds a PhD and MS in Botany from the University of Hawai'i at Mānoa, with part of her BS in Biology from North Carolina State University completed at the University of the South Pacific, Fiji. Her research primarily focuses on the intersections of climate change, agroecology, and nutrition in the Pacific Island region for food system resilience. Ashley's background includes Scientist and Technical positions with the Environmental Defense Fund, USDA-APHIS-PPQ, and as a Fulbright Scholar to Fiji, where she studied the social-ecological resilience of agroforestry systems to major disturbance. She is concurrently an Assistant Extension Specialist in the College of Tropical Agriculture and Human Resources at the University of Hawai'i at Mānoa. Outside this, Ashley dedicates time to music, both as a musician and a lyricist.

Maria Vicini is a new Research Associate at Colorado State University (CSU), and is serving as the Adaptive Silviculture for Climate Change (ASCC) Network Coordinator and a Climate Adaptation Specialist with NIACS and the Southwest Climate Hub. She will graduate from Colorado State University with an MS in Forest Sciences in December 2023. Her research project focused on avian habitat associations in post-fire landscapes of the Southwest. Before she began graduate school, she attended undergrad at Michigan State University, and later worked for several years as a digital specialist for the Michigan Senate, as a marketing assistant for a digital consulting firm, and as a field technician for the CSU fire ecology lab. Maria enjoys trail running, climbing, and hiking with family and friends in her free time.

Forest Resource Index for Decisions in Adaptation

The Forest Resource Index for Decisions in Adaptation (FRIDA) is a library of climate adaptation support tools for forest stewardship in the Southwest. FRIDA is an online library of decision-support tools and resources to help support climate change adaptation decision-making and forest stewardship in the Southwest. FRIDA allows managers and decision-makers to easily query based on their objectives and area(s) of interest. Users can filter

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FOREST RESOURCE INDEX FOR DECISIONS IN ADAPTATION
A library of climate adaptation support tools for forest management

What do you want to find?

Topic	Region	Platform	Vegetation Type
Wildfire Management (27)	Appalachian (14)	All States (2)	Co-Born (36)
Climate Change Adaptation (24)	Northwest (18)	Learning (24)	Conservation Planning (14)
Resilience (21)	Southwest (15)	Planning (21)	Economics (14)
Water Management (22)	West (12)	Public (21)	Fire Behavior (14)
Forest Management (20)	Northwest (12)	Forest Health (14)	Forest Health (14)
Forest Health (14)	Southwest (12)	Forest Products (14)	Forest Products (14)
Forest Products (14)	West (12)	Forest Policy (14)	Forest Policy (14)
Forest Policy (14)	Northwest (12)	Forest Science (14)	Forest Science (14)
Forest Science (14)	Southwest (12)	Forest Tools (14)	Forest Tools (14)
Forest Tools (14)	West (12)	Forest Values (14)	Forest Values (14)
Forest Values (14)	Northwest (12)	Forest Work (14)	Forest Work (14)
Forest Work (14)	Southwest (12)	Forest Youth (14)	Forest Youth (14)
Forest Youth (14)	West (12)	Forest Zoning (14)	Forest Zoning (14)
Forest Zoning (14)	Northwest (12)	Forest Zoning (14)	Forest Zoning (14)
Forest Zoning (14)	Southwest (12)	Forest Zoning (14)	Forest Zoning (14)
Forest Zoning (14)	West (12)	Forest Zoning (14)	Forest Zoning (14)

CLEAR FILTERS

Refine your search

Native Climate: Building Climate Resilience Across Cultures

Kelsey Fitzgerald, Native Climate

The USDA-funded project interweaves Indigenous knowledge and western science to address the climate crisis. Learn more [here](#).

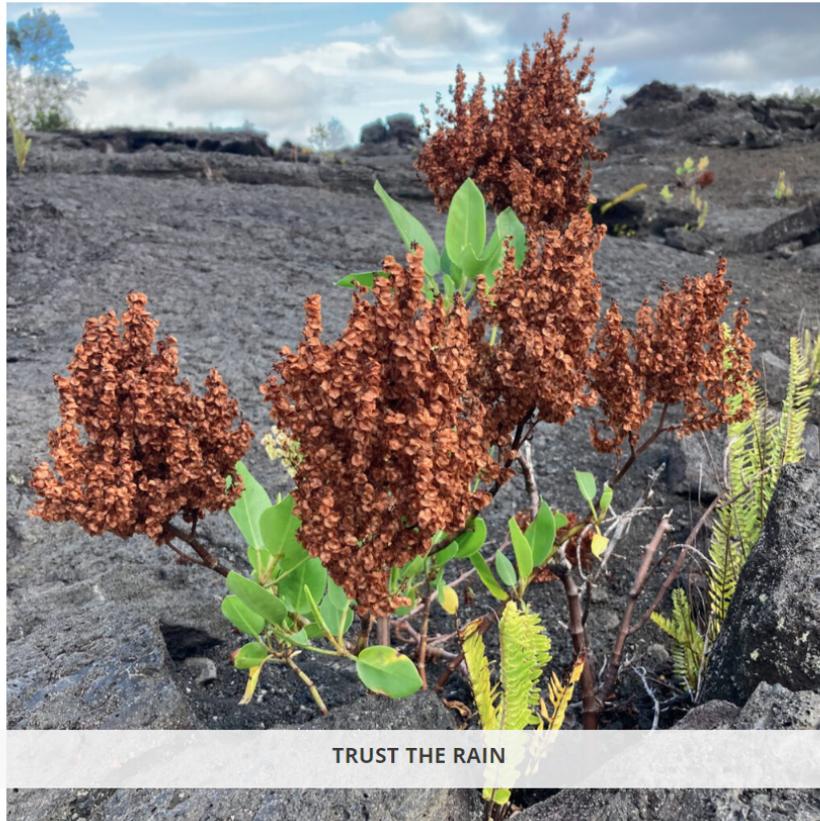


Trust The Rain

Gina McGuire, Native Climate

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placentas ([Ragusa et al. 2021](#), [Liu et al. 2022](#), [Zhu et al. 2023](#)), hearts ([Yang et al. 2023](#)), and lungs ([Amato-Lourenço et al. 2021](#), [Jenner et al. 2022](#)). It is not yet fully understood how microplastics within human organs and bloodstream affect health although initial studies suggest diverse negative effects ([Yin et al. 2021](#)). In this poem I specifically reference the negative effects of microplastics on oysters and their reproduction, as this is well-documented ([Galloway & Lewis 2016](#), [Sussarellu et al. 2016](#), [Gardon et al. 2018](#)). In 'Ōiwi tradition, the marine invertebrates are some of the oldest ancestors within our cosmological genealogy ([Kumulipo](#)). This is a great sorrow and a reflection of our collective failure as caretakers of our ancestrally-linked organisms. Microplastics are now in our food sources, our air, and our water. Microplastics are a part of our climate." Read the poem [here](#).



Tools for the Beef Industry

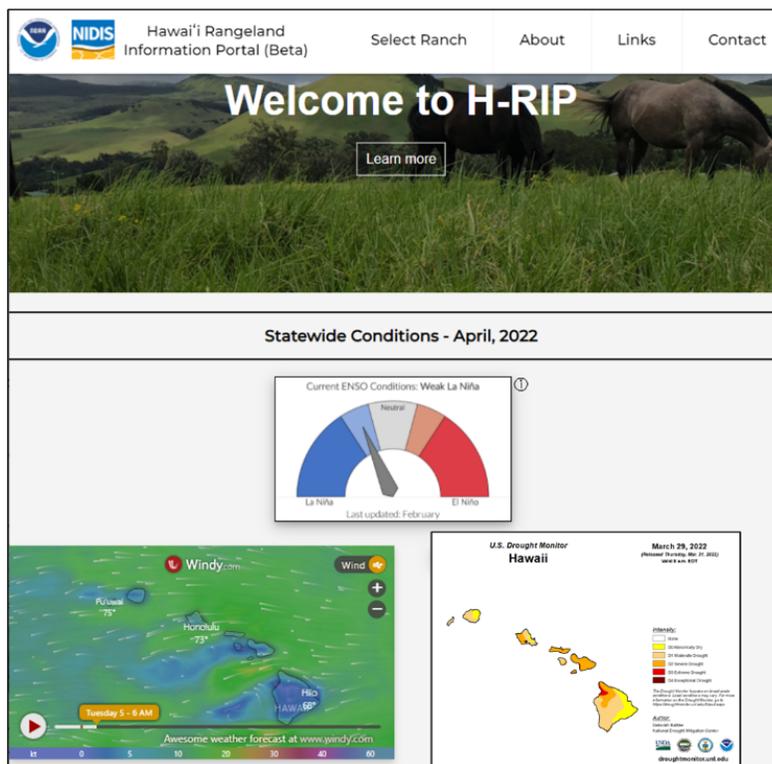
Tools for the Beef Industry (TOBI) is a library of decision support tools for beef cattle production and management. Users can search for tools by platform (smartphone application, software, spreadsheet, etc.), by topic (finance, livestock management, animal and feed performance, etc.), or by audience (producers, consumers, or researchers and technical service providers). Use the tool [here](#).

Water Adaptation Techniques Atlas

The Water Adaptation Techniques Atlas (WATA) compiles information about responses to water scarcity in the southwestern U.S., presented in the form of case studies. Each case is pinned to a geographic location where the action takes place. Use the tool [here](#)

Drought Resilience Tools for Hawai'i: Hawai'i Rangeland Information Portal

Drought poses significant challenges for ranchers in Hawai'i. The Hawai'i Rangeland Information Portal (H-RIP) brings new insights into drought management for ranchers. Learn more [here](#).



Check On The Cows From Your Phone

Precision ranching involves the use of technologies such as smart sensors to allow for automated monitoring or task completion, and ultimately more precise and efficient management of animals and the ranching operation. While enhanced monitoring is one application of precision ranching technologies, some, like virtual fencing, can be used to actively modify or manipulate livestock movement. Learn more [here](#).

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One Person's Trash is Another Person's Restoration Practice: Exploring Composting on Southwest Rangelands

Compost and other organic amendments can support rangeland ecosystem function by increasing soil water retention, soil biodiversity, and soil protection to UV radiation, while reducing erosion. As such, branch mulch, municipal sewage, and livestock manure offer promising rangeland restoration opportunities while closing waste loops. Two new [Conservation and Adaptation Resources Toolbox](#) Case Studies capture results from projects in [southern Arizona](#) and [central New Mexico](#) exploring the benefits of compost on rangelands.



Rainwater Harvesting and Soil Testing Workshop

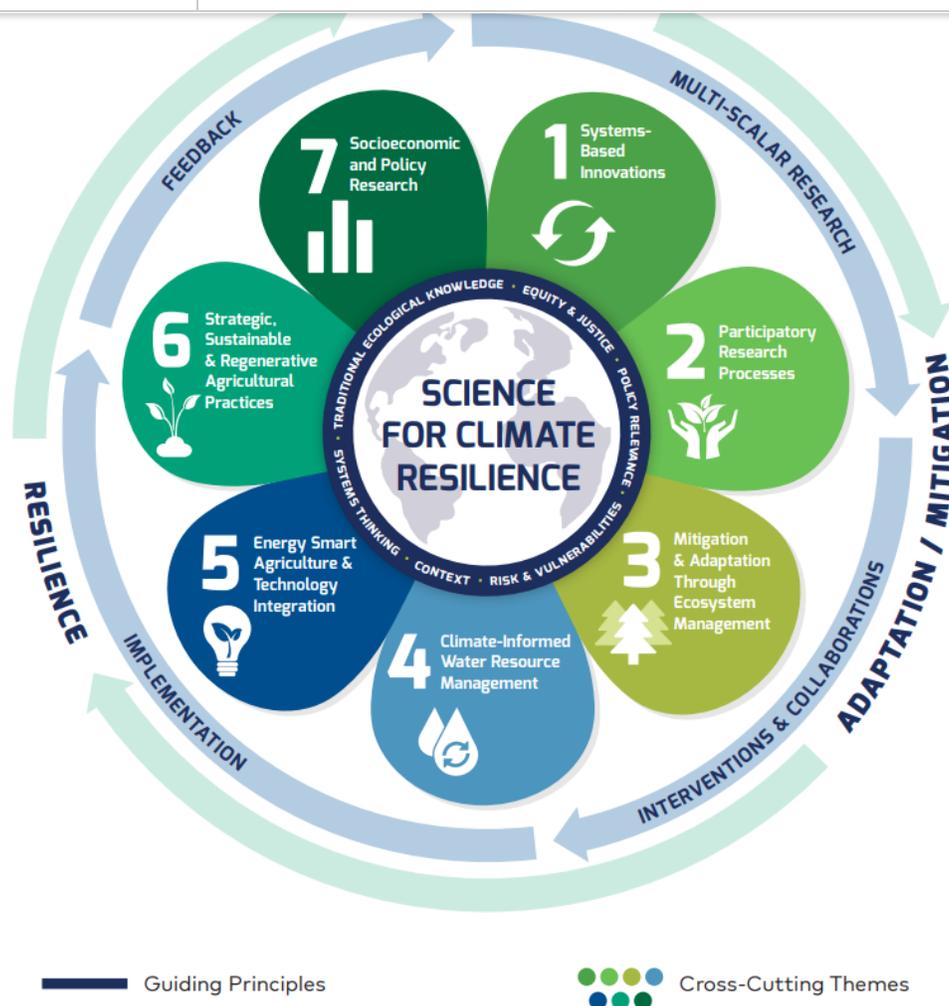
On September 29, 2023, the [Santa Ana Pueblo Department of Natural Resources](#), [Drought Learning Network](#), [National Drought Mitigation Center](#), [New Mexico State University Pueblo Extension](#), and [Southwest Climate Hub](#) collaborated to host a water and soil conservation workshop. Read more [here](#).

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National Climate Change Roadmap Release

The [National Climate Change Roadmap](#) was released at the Association of Public Land Grant Universities Annual Meeting on November 13, 2023. It identifies national priorities for U.S. climate change research related to working lands over the next decade. With a grant from the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA NIFA), a Colorado State University (CSU) research team developed the Roadmap with support from Meridian Institute and 61 leading scientists from more than 50 institutions, including Dr. Joel Brown representing the USDA Southwest Climate Hub. The team used Horizon Scan methodology—a visioning process that synthesizes trends and knowledge gaps related to agricultural research and climate change—to project key focus areas for research, extension, and education. The horizon scan engaged 61 leading scientists from 51 institutions across the U.S. who contributed expertise in a wide range of disciplines and a broad diversity of perspectives.

Guiding research principles and cross-cutting themes emerged, culminating in a framework for science and funding that is systems-based and highly participatory. The framework presented is not an endpoint but rather a starting place from which to evolve and refine to meet climate science challenges for the benefit of agriculture, working landscapes, and the communities that rely upon them. You can find more about the process, principles, and themes from the National Climate Change Roadmap [here](#).



Come Rain or Shine Podcast

The Come Rain or Shine Podcast reports actionable science to facilitate adaptation and resilience in the Southwest. Here's a look at some of our most recent episodes:

Harvesting Hope: Tackling Food Waste, Hunger, and Climate Change

We speak with the directors of two non-profit organizations who are turning problems into solutions by getting nutritious food that would normally go to waste back into our food system and into the hands of those who can use it - reducing waste, methane emissions, and fighting food insecurity all at the same time.



Indigenous Agriculture and Climate Resilience

Continuing with our agriculture theme, this month we are joined by Dr. Michael Kotutwa Johnson (Hopi Tribe of Arizona) who discusses Indigenous agricultural knowledge, traditional farming, Indigenous participation in

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[The Scoop on Kernza®, a Multi-functional Perennial Grain Crop](#)

Kernza® is a small perennial grain with multiple environmental benefits, including carbon sequestration. We are joined by Nicole Tautges (Michael Fields Agricultural Institute) and Hana Fancher (The Land Institute) to learn more about the benefits and uses of Kernza®, as well as some of the challenges associated with growing this grain, and possible future directions.

Find us on Buzzsprout at: <https://rainorshine.buzzsprout.com/>



2024 Southwest Adaptation Forum

February 27-29, 2024 | Desert Diamond Hotel and Conference Center | Tucson, Arizona

The Southwest Adaptation Forum is a bi-annual gathering of practitioners, professionals, community members, and researchers working in diverse ways to address the effects of climate change. Collectively we accelerate the pace and scale of effective climate adaptation and mitigation to reduce the impacts of climate change in communities and landscapes across the Southwest U.S.

Register [here](#). Scholarships are available by application. Apply for scholarships [here](#). For more information, contact Colleen Whitaker (colleen@swdresources.com).

[Register here](#)

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Intermountain West Drought Briefing: December 5, 2023

This webinar highlighted current drought conditions and snow drought in the Intermountain West (Arizona, Colorado, New Mexico, Utah, and Wyoming). Current drought conditions vary widely across the Intermountain West. The central and southern areas of the Intermountain West are managing Moderate to Exceptional Drought (D1–D4): 26.9% of Colorado is in drought (2.1% in D3), 96.8% of New Mexico is in drought (43% in D3–D4), and 57.2% of Arizona is in drought (6.1% in D3). Only 9.6% and 4.8% of the northern states of Utah and Wyoming are in drought, respectively.

There was also a special presentation on the Fifth U.S. National Climate Assessment (NCA5) and the NCA Interactive Atlas Explorer. The NCA Interactive Atlas Explorer provides digital access to downscaled climate projections used in NCA5, which allows users to explore projected changes to local climate conditions.

Climate Reporting for the Southwest

November 2023 SW Climate Podcast – Winter is Coming

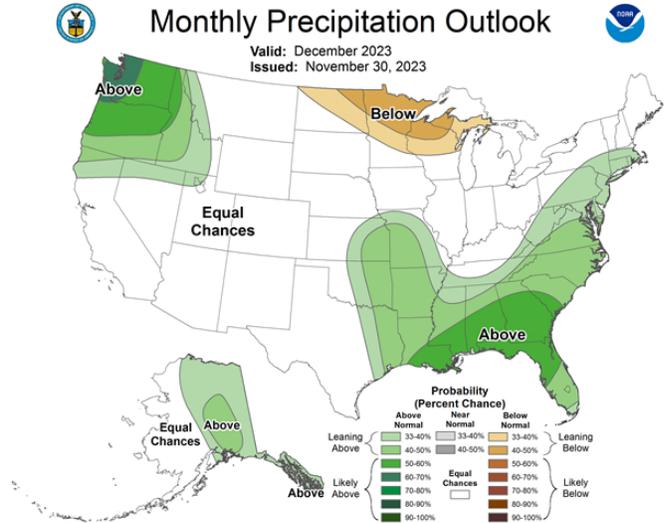
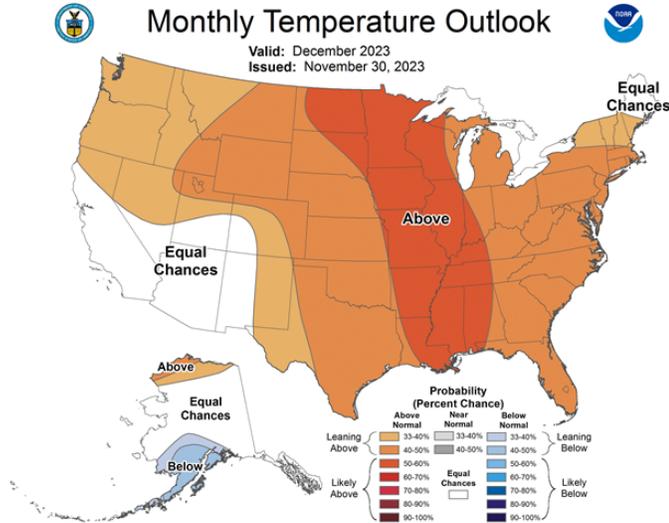
In Southwest Climate Podcast, Zack Guido and Mike Crimmins are back from Thanksgiving to give a recap of November, which was not much to write home about. They start gearing us up for the next few months by taking a look back at previous winters and give a glimpse into this coming season as far as impacts, synoptic features, and large-scale drivers. The team rounds it out with a deep dive into El Niño and the complex forecasting that may or may not bring us some needed winter precipitation. Also - the monsoon is gone but not forgotten! Listen [here](#).

El Niño/Southern Oscillation (ENSO)

As of November 9, 2023, the ENSO alert system status is [El Niño Advisory](#). Forecasters announce El Niño conditions are expected to continue into spring. You can read more perspectives and analyses about ENSO available at the NOAA [ENSO Blog](#). The next ENSO Diagnostics Discussion is scheduled for December 14, 2023.

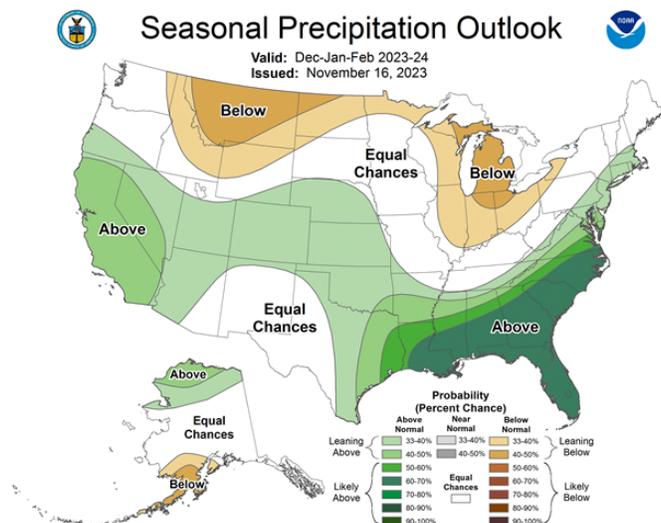
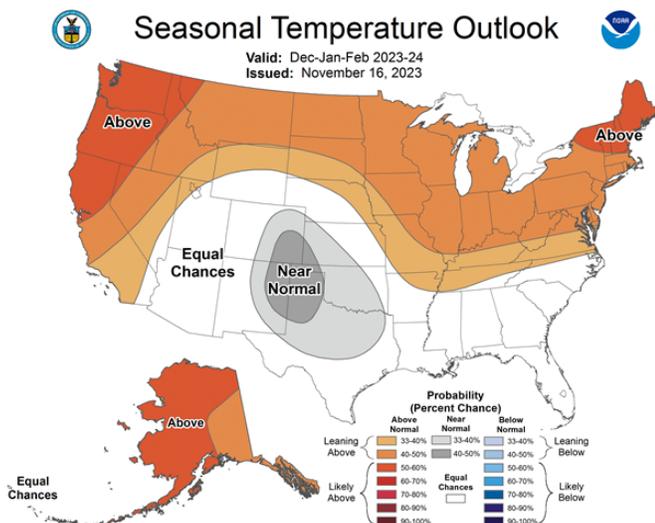
1-month outlook

As of November 30, the **one-month outlook** for December 2023 shows a 33% chance of above-normal temperatures for portions of Nevada, Utah, and New Mexico. The outlook shows there will be an equal chance for precipitation in the southwest.



3-month outlook

As of November 16, the **three-month outlook** (Dec-Jan-Feb 2023-2024) shows a 33-50% chance of above-normal temperatures for Nevada, equal chances for the southwest, and a 33-40% chance of near normal for eastern New Mexico. There will be an equal chance of precipitation for portions of Arizona and New Mexico and a 33-40% chance of above-normal precipitation for Arizona, Utah and Nevada. To view more short-term outlooks, please visit the [NOAA's National Weather Service Climate Prediction Center](#).



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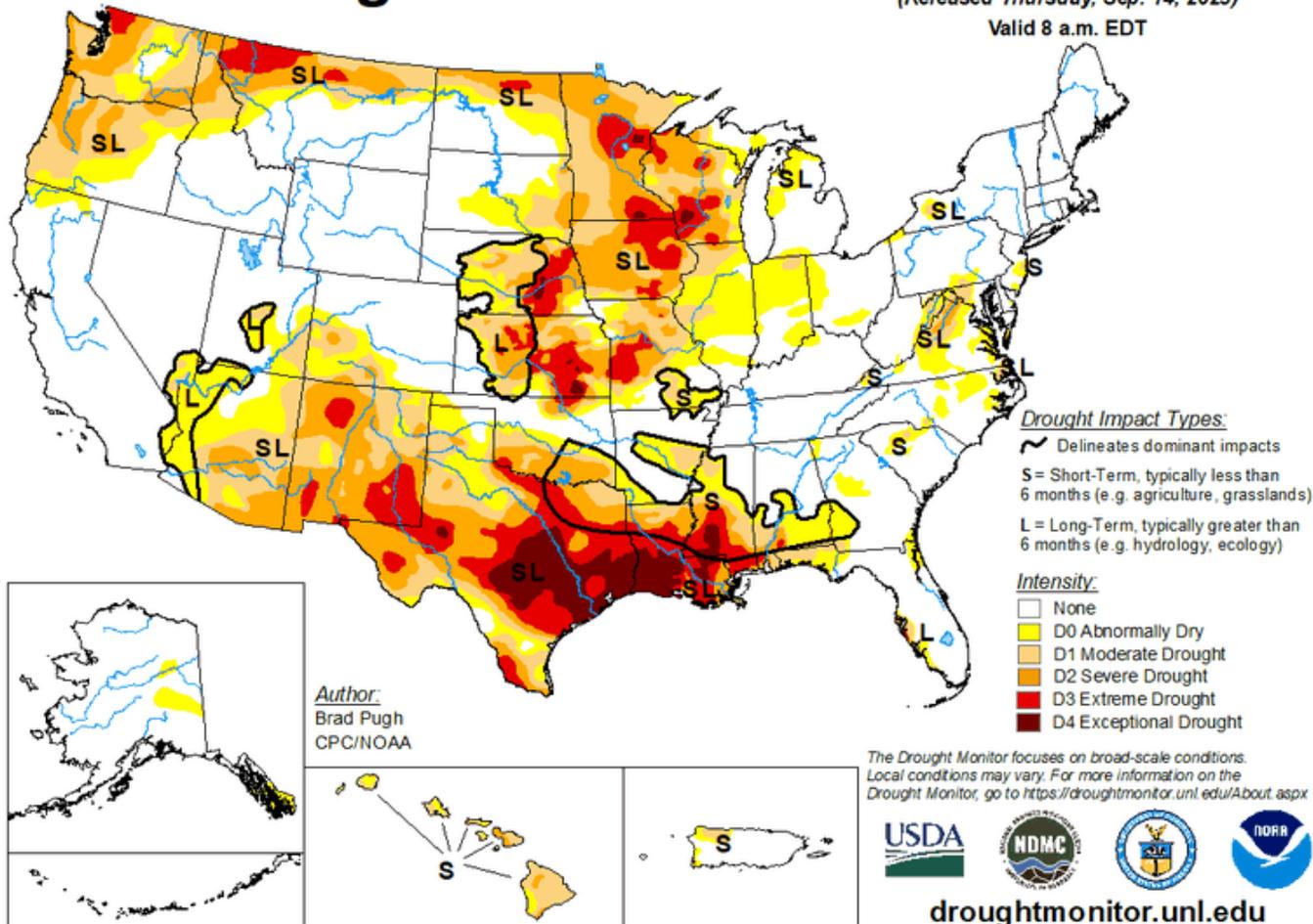
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The [animation map](#) is a compilation of the past 12 weeks of the drought monitor maps. The [change map](#) illustrates the difference in drought class changes for the past 12 weeks. For a more detailed drought summary in your area of interest, visit the U.S. Drought Monitor [website](#).

Animation Map (September 19 - November 28, 2023)

U.S. Drought Monitor

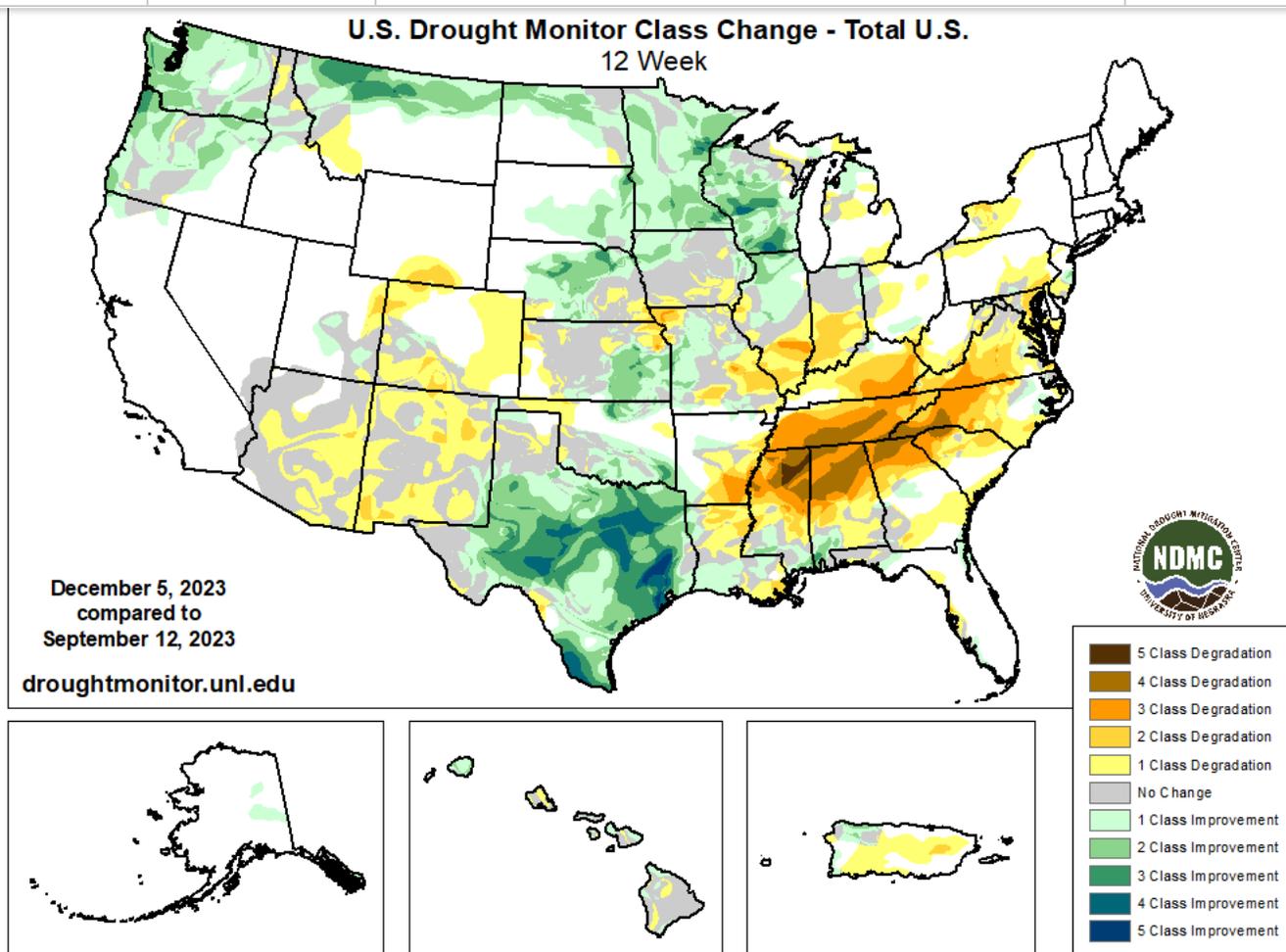
September 12, 2023
(Released Thursday, Sep. 14, 2023)
Valid 8 a.m. EDT



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Announcements

Call for Papers: Water Scarcity Solutions for Irrigated Agriculture in the Warming Western U.S.

The issue has two main goals. First, to illuminate the historic development of irrigated agriculture in the West, especially highlighting shifts in cropping patterns and irrigation technologies that have unfolded over the past several decades and understanding how these shifts have contributed to the imbalance of water supply and demand at a regional and sub-regional scale. Second, to highlight research that explores solutions for more effectively managing agricultural water use in this context. Topics could include novel irrigation technologies, decision-support tools and education programs for irrigators, alternative low water-use crops, or on-farm aquifer recharge.

When submitting your manuscript please select the article type “**VSI: Western Water Solutions**”. The submission period is from **November 1, 2023 to May 1, 2024**. More information [here](#).

UM Montana Climate Office, CSKT Digital Story Collection Honored with TEK Award

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ArcGIS Storymaps Competition. The collection was created by the [Montana Climate Office](#) at the University of Montana and the Confederated Salish and Kootenai Tribes of the Flathead Reservation.

This project is a central component of the [Native Drought Resilience Project](#), a collaborative effort between CSKT, Salish Kootenai College, the UM climate office, and the Wilderness Society. The effort was led by Kyle Bocinsky, Montana Climate Office director of climate extension. Read the full news release [here](#).

New Mexico LandLink

New Mexico LandLink, a program of the New Mexico State University's Cooperative Extension Service, is dedicated to bridging the gap between farmers, ranchers, and landowners. The goal is to facilitate sustainable and mutually beneficial relationships between individuals looking to lease or sell land and those seeking agricultural opportunities. NM LandLink aims to overcome these barriers through a simplistic land-linking platform and a statewide program that offers professional support to both producers and landowners. More information [here](#).

Job Opportunities

Postdoctoral Scholar: Fire-Climate-Vegetation Interactions of the Great Basin

The University of Nevada, Reno (UNR) is recruiting for a Postdoctoral Fellow to carry out a research project that synthesizes existing knowledge regarding the intersection of fire, climate, and vegetation in the Great Basin. The Fellow will work with a diverse interdisciplinary team of leading scientists and administrators in the USDA Climate Hub Network, University of Nevada, Reno, and the USFS Rocky Mountain Research Station (RMRS). The Fellow will also be expected to interact with land managers across the Great Basin to assess science needs and opportunities. This position is located on UNR Main Campus, reports to Dr. Peter Weisberg, and will be co-mentored with RMRS research scientists Dr. Alexandra Urza and Dr. Sarah Barga. More information [here](#).

Climate Adaptation Specialist

The South Central Climate Adaptation Science Center (CASC) is seeking a Climate Adaptation Specialist to synthesize climate adaptation research and combine the information with our CASC climate projections, tools, or other relevant products for resource managers in New Mexico and West Texas. More information [here](#).

Upcoming Events

- January 15-18, 2024 - [Southwest Indian Agriculture Association Conference](#)
- January 18, 2024 at 2:00 pm MT - [NCA5 Webinar: Agriculture, Rural Communities, and Food Systems](#)
- January 19, 2024 at 11: am MT - [NCA5 Webinar: Tribes and Indigenous Peoples](#)
- January 28- February 1, 2024 - [Society for Range Management](#)

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- February 13, 2024, at 1:00 pm PST - [NCA5 Webinar: Hawaii & U.S.-Affiliated Pacific Islands](#)
- February 23, 2024, at 12:00 pm MT - [NCA5 Webinar: Southwest](#)
- February 27-29, 2024 - [Southwest Adaptation Forum](#)

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