USDA Southwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE

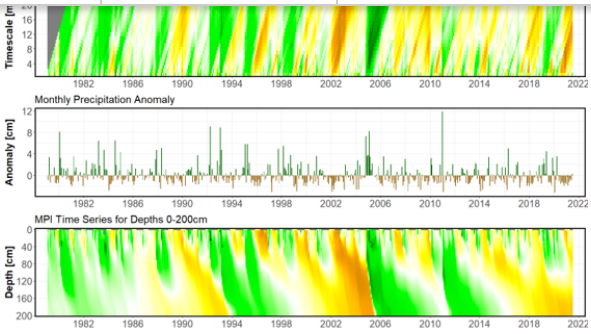
Southwest Climate Hub Bulletin

News from the Southwest Hub region
July 2024

Solutions Abound

Amid the persistent news of more intense and frequent wildfires and extreme heat in the Southwest, people are diligently working on climate solutions. In the past three months, we have interviewed experts on the **promise of agrivoltaics**, **efforts to advance climate services**, and **reducing methane emissions from cattle**. Our team published examples of people in the region restoring **rangelands** and **riparian areas**; implementing **water-wise landscape design**, and reducing **food waste** for greenhouse gas mitigation. The **Water Adaptation Techniques Atlas** now serves 249 water scarcity solutions (see this **video**, **article**, and **news briefing** to learn more). The **Forest Resource Index for Decisions in Adaptation** now provides more than 500 resources for forest adaptation practitioners and was recently shared via three presentations. Finally, we discussed climate solutions with partners at more than 16 adaptation workshops, summits, webinars and meetings over the past three months. Thanks to the many of you advancing climate solutions – your work matters.

Climate



How do Multiscalar Drought Indices Relate to Soil Moisture in the Semi-arid Southwest?

Authors: Trevor T. McKellar, Michael A.Crimmins, Marcel G. Schaap, Craig Rasmussen

Drought indices are a key decision-making tools for land management activities. However, a lack soil moisture datasets throughout the Southwest limits identifying the index and timescale that best represents soil water availability. This recent study explores the relationship between the Standardized Precipitation Index (SPI), the Standardized Precipitation Evapotranspiration Index (SPEI), and a new modeled soil moisture dataset across the Southwest. Read more **here**.

The New Earth Project Pilot: Climate Change Mitigation Through Food Waste Reduction

When left in landfills, food waste and liability biomass (e.g., branches from forest thinning) emit greenhouse gases that contribute to climate change. However, when processed appropriately, these wastes can increase soil health and its potential as a carbon sink. The Upper Gila Watershed founded the New Earth Project to reduce waste, while improving soil, carbon draw-down, and food system resilience. The program is powered by Johnson-Su bioreactors and local youth in Santa Clara, NM. Read more **here**.

Agriculture

Rangelands Gateway

Virtual fence is a hot topic right now and many have high hopes for its future in grazing management. However, as with any new technology, there is a learning curve involved and it is invaluable to capture the lessons learned from early adopters. That's exactly what some researchers at Oregon State University, in partnership with The Nature Conservancy and USDA-ARS, have done in their new "Setup for Success" video series. Each 10-minute video features multiple practitioners who have boots-on-the-ground experience with virtual fence. This four-part series can be found on the Rangeland Gateway's **Virtual Fence topic page**.

Congress Meeting

On July 10-11, 2024, **Diné College Land Grant Office**, **Navajo Sustainable Agriculture Project**, and **Southwest Climate Hub** hosted a meeting for producers across the Navajo Nation to hear about the Agricultural Priorities from Navajo Nation Division of Natural Resources and Navajo Department of Agriculture. Producers participated in hands-on demonstration for rangeland monitoring utilizing the **Rapid Assessment Methodology** and **estimating carrying capacity**. Ranchers also had an option to attend and become certified in **Beef Quality Assurance**.
New officers were elected and **Ed Harvey** is the new President for Navajo Farmer & Rancher Congress. Stay tuned for future meetings and workshops.

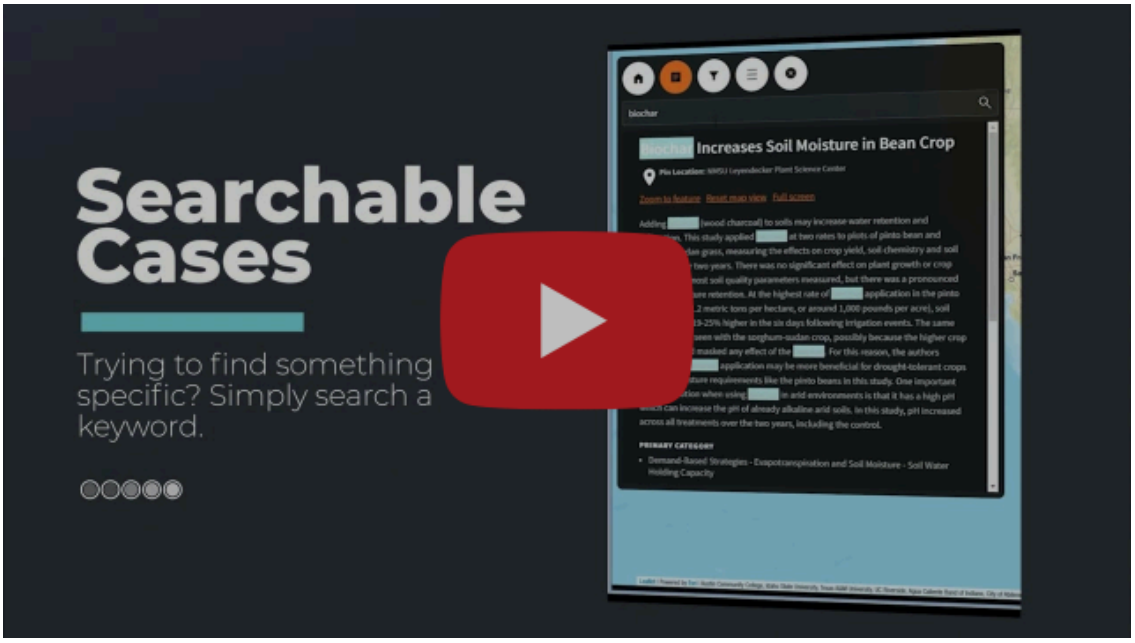
Soil Health Research in Clovis, New Mexico

Interest in soil health practices is growing in the Southwest. Still, adoption rates remain low, partly due to limited information on how specific practices might impact water availability or soil nutrients in arid or semi-arid soils. Another challenge is that arid land soils naturally have low organic matter content (less than 2%), and the lack of water inhibits the biological processes that help build organic matter. Rajan Ghimire and his team at New Mexico State University's Agricultural Science Center at Clovis are working to answer some of the questions that face soil health practitioners in arid and semi-arid lands. Read more **here**.

Water

Teaching Water-Wise Landscape Design to Conserve Water in the Intermountain West

As urban populations boom and snowpack diminishes, water demand in the Intermountain West exceeds supply. Urban properties hold exceptional potential to decrease municipal water use if designed with water conservation in mind. Because implementing water-wise design and breaking from conventional landscape aesthetics can be a daunting task, Utah State University's Landscape Architecture and Environmental Planning (LAEP) Extension administer a course called Design 4 Every Drop. This hybrid course includes online and in-person courses for homeowners to learn water-wise landscape principles, understand the multiple ecosystem benefits of water-wise design, and develop plans for their properties. Read more **here**.



Water Adaptation Techniques Atlas (WATA)

tool.

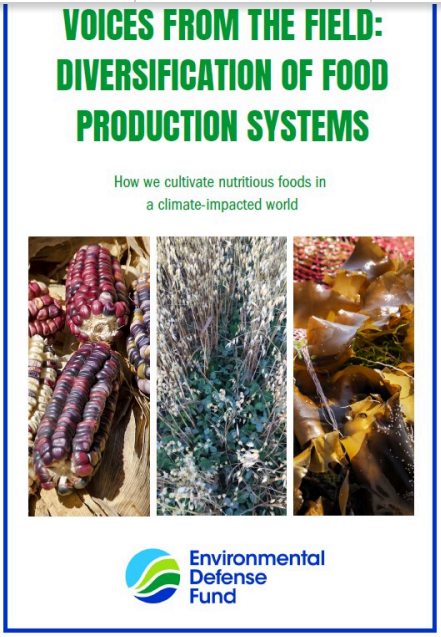
Hawai'i and US Affiliated Pacific Islands

Food System Resiliency for Children's Healthy Living in the US Affiliated Pacific Region

The **Children's Healthy Living** (CHL) Food Systems program focuses on improving diet quality and food security across the US Affiliated Pacific region to improve community health. At the **CHL11th Annual Meeting,** representatives from Hawai'i, CNMI, American Samoa, Guam, Alaska, and others gathered to share progress, including the need to address climate factors like typhoons. With most food imported in the region (**85-90%in Hawai'i**), climate disasters impacting ports can severely threaten food security, diet quality, and health. The Hawai'i USAPI Coordinator presented on functional diversity for resilient, local food production, and ways the Southwest Climate Hub can support in building climate capacity.

Building Pan-Pacific Climate Capacity Through Partnership with University of Hawai'i and University of the South Pacific

Climate is a critical issue across the Pacific. To help build climate capacity in the region, we facilitated a meeting between leadership at the **University of Hawai'i** (UH) and the **University of the South Pacific** (USP). We discussed closer partnership and collaboration, specifically via a new **U.S. State Department program** that focuses on PhD Student and Faculty exchange between USP, UH, and others as a part of the **White House's roadmap for a 21st-Century U.S.-Pacific Island partnership**. Focal areas include climate resilience, sustainable food systems, natural resource economics, and more. Check out **UHNews** for additional information with more opportunities to come!



Food System with Diversified Production Practice

Insights were gathered during a food systems diversification workshop organized by the **Environmental Defense Fund** (EDF) during the 2023 **World Food Prize** event, where EDF brought together over 20 participants, including traditional and Indigenous producers, policymakers, business owners, and academic experts, to share their experiences and insights on food production diversification and its benefits in the face of climate disasters and disturbances. With colleagues across teams at EDF, the Southwest Climate Hub, and the **University of Hawai'i at Mānoa**, we collaborated to ensure these critical stories were captured and shared. Read more **here**.

Recent News: Hawai'i-based climate projects receive $5.5M from USDA

The U.S. Department of Agriculture has awarded over $5.5 million in Conservation Innovation Grants to Hawai'i-based projects. The University of Hawai'i received the largest grant, totaling over $2 million. The USDA awarded the money for the testing and research of the use of AI-enhanced irrigation systems at 14 farms. (Source: hawaiipublicradio.org)

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:

emissions from cattle in pursuit of improving efficiency and lowering emissions.

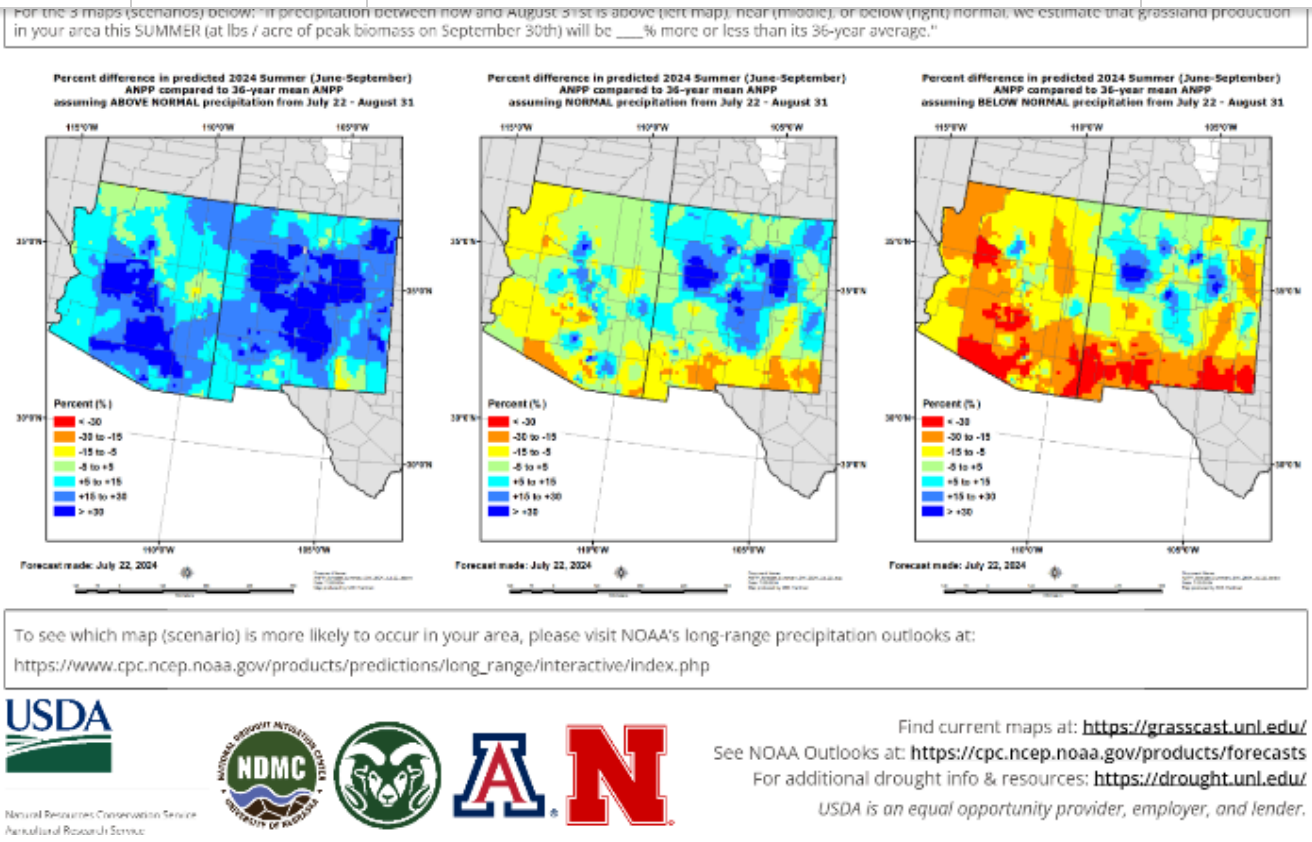
Advancing Climate Services Across the Federal Family, a discussion with Julian Reyes about climate services at the White House Office of Science and Technology Policy and the entire federal family to find synergies to maximize benefits to society.

Agrivoltaics: Producing Food and Energy in the Same Place, interview with Dr. Greg Barron-Gafford and Dr. Brandon Bestelmeyer to learn more about agrivoltaics, the combination of agriculture and photovoltaics to create co-benefits across food, energy, and water systems.

Announcements

Upcoming Teacher Workshop: Climate Change in the Southwest

Educators across the Southwest are invited to join the Asombro Institute for an interactive workshop on the Climate Hub's free middle and high school lessons that explore the impacts of climate change in the southwest. We'll focus on issues like increased wildfire risk and limited water availability. Participants will practice experiments, games, and activities that they can use in classrooms to break these big concepts down into bite-sized pieces, exploring the causes, impacts, and mitigation of climate change in our lives. More information and registration at **www.asombro.org/teacher-workshops**.



Grass-Cast Maps

Grass-Cast uses well-known relationships between historical weather and grassland production. It combines current weather data and seasonal climate outlooks (from NOAA Climate Prediction Center) with a well-trusted grassland model (DayCent) to predict total biomass (lbs/acre) for your local area, compared to its 36-year average. Grass-Cast is an optional tool that managers can use to form a more educated guess about the upcoming spring & summer growing seasons. It can help inform the design of proactive drought management plans, trigger dates, stocking dates, and grazing rotations. For more info visit **https://grasscast.unl.edu**.

Farmer Training Convergence

On August 30-31, 2024, farmers and food systems supporters will gather at the Old Fort in Hesperus, Colorado to share knowledge, resources, ideas, and inspiration. More information **here**.

Water Wise Grazing Field Day

gas emissions in the field; Assessing available forage; How to create an adaptive grazing plan; Digital and analogue tools to develop grazing plans: TOBI, Grass-Cast and Rangeland Analysis Platform (RAP). More information **here**.

Tribal Climate Resilience Annual Awards Program

The **Branch of Tribal Climate Resilience** (TCR) provides financial support for federally recognized Tribal Nations and authorized Tribal organizations through a competitive funding opportunity to address current and future climate change impacts on Tribal Treaty and Trust resources, economies, regenerative agriculture and food sovereignty, conservation practices, infrastructure, and human health and safety. Read the **FY2024 Press Release** to learn more. All 2024 award applications must be submitted online by October 18, 2024.

Climate Report

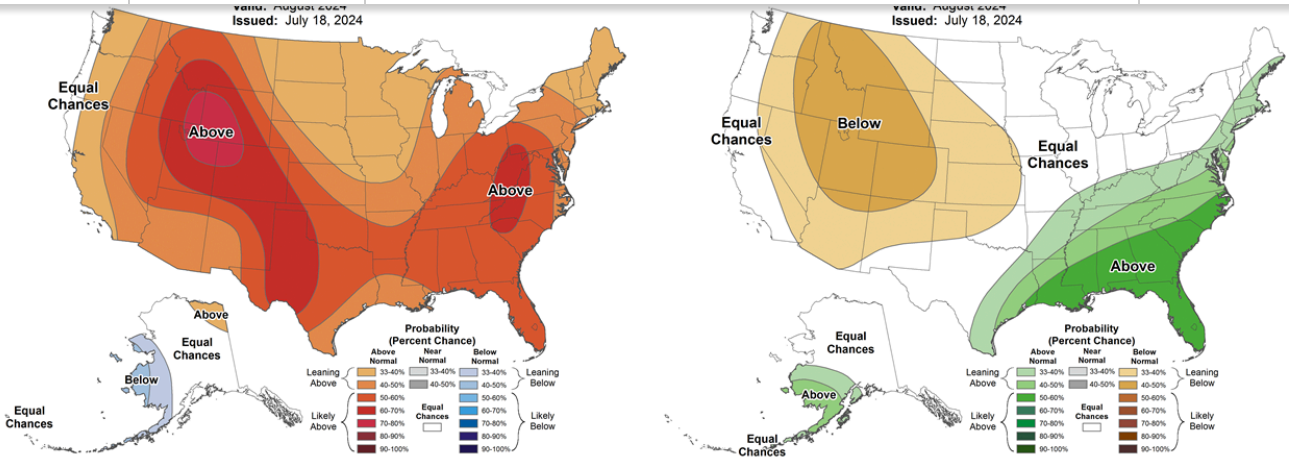
El Niño/Southern Oscillation (ENSO)

As of July 11, 2024, the ENSO alert system status is **La Niña Watch**. Forecasters expect ENSO-neutral to continue and predict a 70% chance of La Niña to develop in August-October 2024. You can read more perspectives and analyses about ENSO available at the NOAA **ENSO Blog**.

National Weather Service Climate Prediction Center Outlooks

1-month outlook

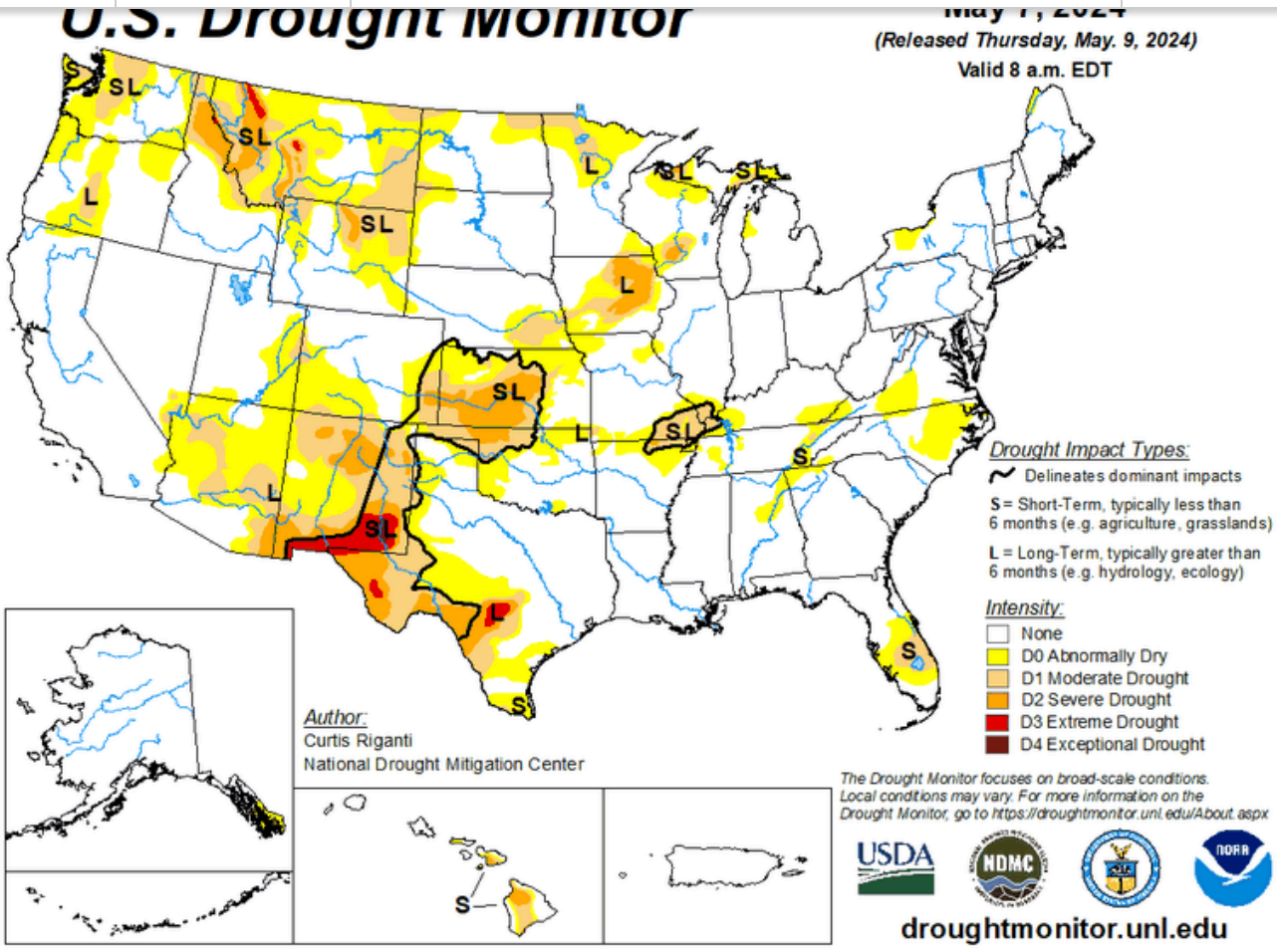
As of July 18, the **one-month outlook** for August 2024 shows a 40-80% chance of above-normal temperatures for the southwestern US. The outlook shows an equal chance of precipitation in the southern New Mexico and the rest of the southwestern US shows a 33-50% chance of below-normal precipitation. To view more short-term and seasonal outlooks, visit the NOAA National Weather Service Climate Prediction Center **website**.



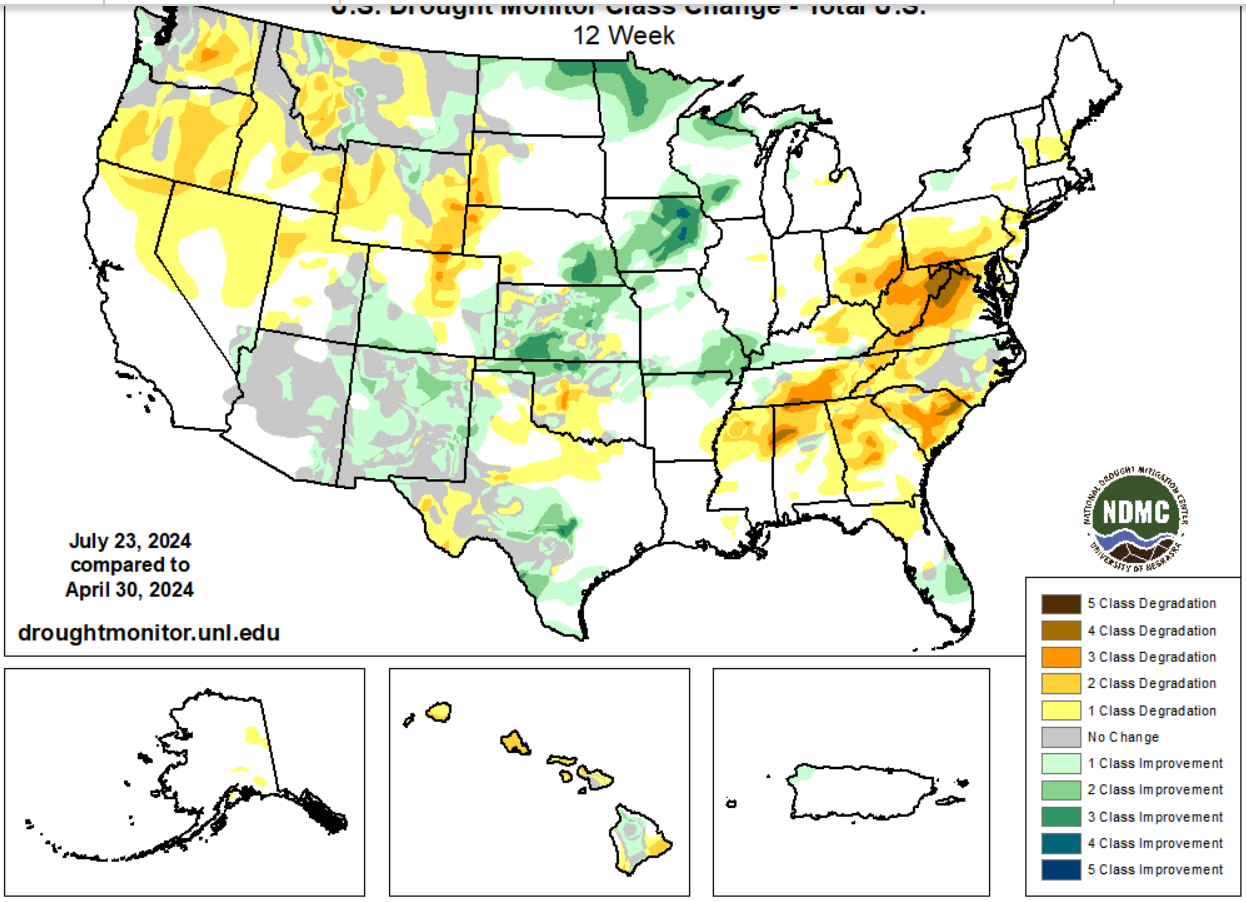
Drought

The US Drought Monitor **Animation map** is a compilation of the past 12 weeks of drought monitor maps. The US Drought Monitor Class **Change map** illustrates the difference in drought class changes for the past 12 weeks. For the Southwestern US, the change map shows a 1-2 classes of improvement, and no change in drought class in Arizona and New Mexico. For Nevada and Utah there is a 1-2 class degradation. For a more detailed drought summary in your area of interest, visit the U.S. Drought Monitor **website**.

Animation Map (May 7 - July 23, 2024)



Change Map (April 30 - July 23, 2024)



Funding Opportunities

WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2025
Deadline October 07, 2024

WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2024
Deadline November 13, 2024

Agriculture and Food Research Initiative Competitive Grants Program Education and Workforce Development
Deadline December 05, 2024

Tribal Colleges Research Grants Program
Deadline December 31, 2024

Agriculture and Food Research Initiative Competitive Grants Program Foundational and Applied Science Program

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