CLIMAS
Climate Assessment for the Southwest
A NOAA RISA TEAM

## Science that makes a difference

The Climate Assessment for the Southwest, or CLIMAS, serves the people of Arizona and New Mexico by providing information to help communities, resource managers, and agricultural producers make decisions related to drought, wildfire, extreme weather, and the economic and human health impacts of these phenomena.

CLIMAS has been funded by NOAA RISA since 1998.

**CLIMAS integrates local perspectives, priorities, and expertise into our research to collaboratively develop actionable knowledge for a more resilient future.**

## Science with real-world impact:

CLIMAS focuses on challenges affecting people, governments, businesses, and organizations across the Southwest by working directly with regional partners to deliver useful and relevant research results.

CLIMAS researchers studied dust storms in the Southwest to improve highway safety. Results from the work informed the development of a dust storm warning system **now in use by National Weather Service offices in El Paso, TX and Phoenix, AZ**.

In the Lower Colorado River Basin, CLIMAS researchers investigated how temperature affects streamflow to understand potential impacts on regional water supplies. The **Salt River Project—the largest Arizona water utility—used results of this study and other CLIMAS work to inform both the U.S. Bureau of Reclamation and customers about their water resiliency projects.**

Through collaboration with wildfire decision makers in the Southwest US, a team of CLIMAS researchers developed a tool to provide real-time, location-specific visualizations of burn periods—the number of hours per day conducive to burning—for wildland fire managers across the Southwest. **The Burn Period Tracker** has been integrated into the Southwest Coordination Center's Fire Danger Intelligence webpage and is being **used to inform operational decisions related to prescribed fire and wildland fire management planning**.

## Bringing local insights into research:

CLIMAS researchers actively incorporate local knowledge and experiences into their work to ensure their research incorporates multiple kinds of expertise.

The USDA Livestock Forage Program compensates livestock producers for losses caused by drought and wildfire. CLIMAS researchers found official drought designations often differ from impacts experienced by ranchers, leaving some losses ineligible for reimbursement. This research highlights the need for a national effort to incorporate local drought experiences into characterizations of drought conditions.

The North American monsoon provides up to 50% of the annual rainfall in AZ and NM but also leads to extreme weather impacts. Monsoon precipitation is difficult to forecast and analyze, leading CLIMAS researchers to integrate multiple data sources, including citizen-collected rainfall data, to create a central monsoon data repository now used to aid in flood control, storm recovery, and forecasting.

Wildfires have wide-ranging impacts on public health. To better understand how to provide useful information to public health professionals, CLIMAS researchers gathered input from state and county health professionals in AZ and NM. Initial findings suggest that regional public health professionals have limited access to information about prescribed and wildland fire, highlighting opportunities for targeted, impactful research.

## Developing new tools and information resources:

CLIMAS produces tools and resources to support climate adaptation and decision making, such as monsoon visualizations, wildfire data tools, data repositories, economic analyses, and urban heat maps.

CLIMAS researchers work to support natural resource management across Arizona and New Mexico by producing monthly climate and drought reports for national forests in the region. The reports are **strengthening decision-making by improving access to localized data** and facilitating conversations among land managers and stakeholders like grazing permittees. The reports are now being used by 12 national forests, an NRCS unit, and a county rangelands management unit.

The **CLIMAS Southwest Climate Outlook** (SWCO) delivers monthly summaries of regional climate conditions. Ranchers use it to monitor drought, water resource managers track evolving seasonal conditions, and scientists access reliable and clear graphics for public presentations.

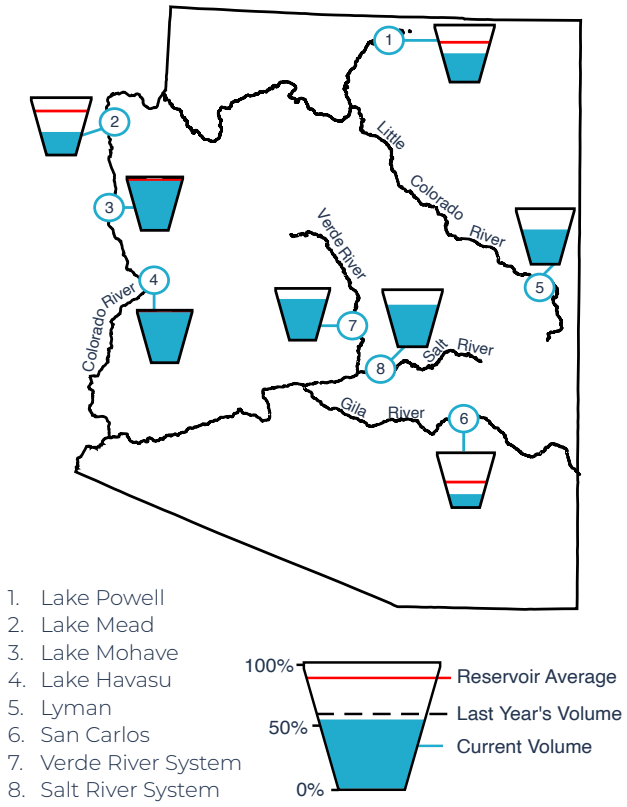
Communities across AZ and NM strive to manage drought, extreme precipitation, and extreme heat to protect their health, safety, and economic security. Many communities lack access to the data they need for optimal decision-making. CLIMAS researchers created **climate and weather profiles** that communities now use to inform their adaptation plans and resilience strategies.

## CLIMAS Priority areas

CLIMAS is funded through competitive NOAA grants. In 2022, we secured a 5-year grant to support our work through 2027. We currently focus on working with rural communities experiencing the effects of increasing heat and drought. Our priority areas are:

- **Regional impacts of increasing aridity and drought**
- **Drivers of changes in surface water availability**
- **Effects of extreme heat on human health and well-being**
- **Public health challenges from wildfire**

AZ Reservoir level graphic from the Southwest Climate Outlook.




1. Lake Powell
2. Lake Mead
3. Lake Mohave
4. Lake Havasu
5. Lyman
6. San Carlos
7. Verde River System
8. Salt River System

"I have read the SWCO monthly summary almost every month since it was first developed [in 2002]." *—Paul W., Flagstaff*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