



# DROUGHT EARLY WARNING: A MODERN, SECTOR-SPECIFIC APPROACH

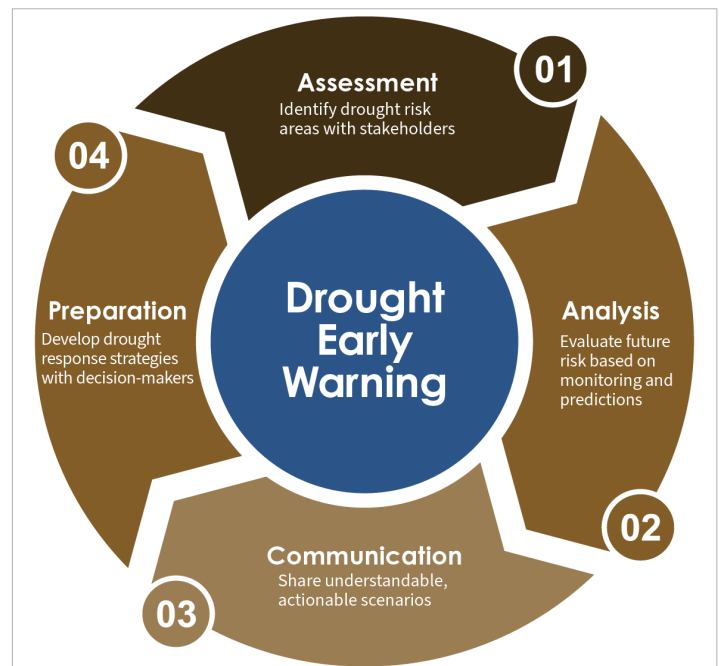


NOAA’s National Integrated Drought Information System (NIDIS) and Physical Sciences Laboratory are partnering with the California State Climatologist/California Department of Water Resources, NOAA’s National Weather Service (NWS) and National Centers for Environmental Information (NCEI), and the California-Nevada Adaptation Program, a NOAA CAP team, to deliver a user-oriented and evidence-based approach to drought early warning for sectors of our Nation’s economy susceptible to the hazards of too much and too little water. This partnership will pilot a drought resilience framework for Southern California over the 2024-2025 wet season. It will produce sector-specific drought scenarios delivered via a virtual briefing and document based on tailored monitoring and forecasting information, which will enable users to make proactive decisions ahead of drought.

## Piloting A Modern Approach to Drought Early Warning

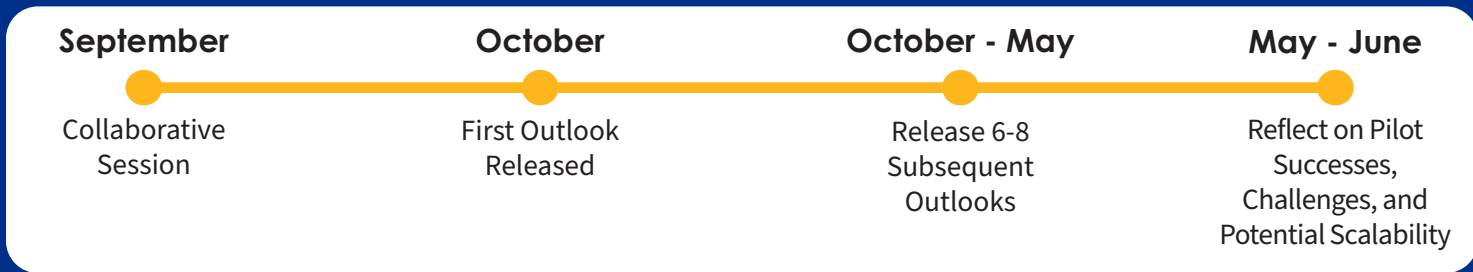
The pilot builds on well-established California-Nevada Drought Early Warning System (DEWS) communication and partner networks. Key outputs of this modern approach to Drought Early Warning include scenarios that provide users with sector-specific, forward-looking outlooks of the most likely drought outcomes relevant to their decisions. Partners may use these scenarios to determine their own drought risk, project likely drought impacts, and guide proactive decision-making across the region of interest. Drought scenarios are based on integrated information products, services, and experimental applications that include observations, forecasts, and deep knowledge of local-to-regional-scale drought behavior. The targeted sectors for this regional pilot are agriculture, water utilities, and public health.

This effort builds upon the call from the [2019 National Drought Forum](#) to “communicate drought conditions, outlooks, and impacts through vehicles tailored to specific watersheds, populations, and sectors.” The pilot will support discovery of the feasibility, opportunities, and barriers to deliver sector-specific drought early warning information, integrate users needs and feedback in real time, and determine scalability to other regions and sectors. It will also offer opportunities to evaluate and incorporate new monitoring and forecast information in a user-centric approach.



Drought Early Warning is an integrated process of assessing conditions and response strategies, analyzing risk, communicating that risk, and preparing to respond to drought.

# 2024 - 2025 Anticipated Pilot Milestones



## Southern California: At Risk for Too Much or Too Little Water

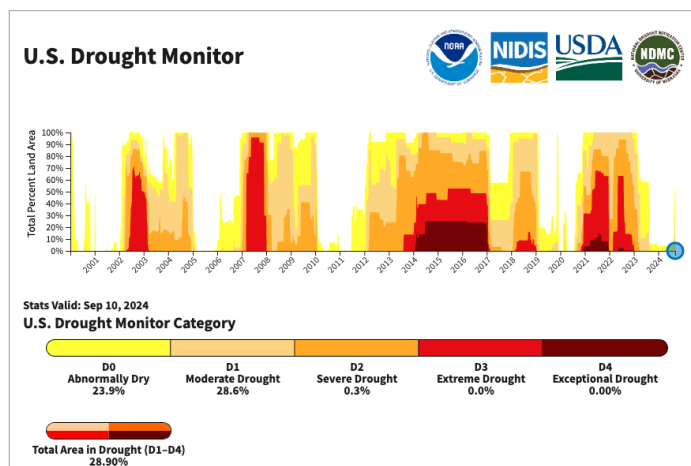
California has diverse and variable weather and climate and a complex water supply system that depends on environmental conditions across the entire Southwest United States. Because of this, drought and its impacts vary depending on a user's location, sector, water supply and demand, and time in extended dry conditions. Southern California, home to nearly 24 million people, is primed for more advanced and tailored drought early warning information for several reasons:

**Recent multi-year drought:** The region experienced several historic multi-year droughts over the last 20 years and has relatively advanced mitigation and adaptation strategies.

**Varied timing of impact:** Southern California's water supply and demands are varied. Some communities rely on annual rainfall (e.g., ranchers); without supplemental irrigation, they are first impacted by drought. Large urban centers and agricultural producers more so depend on the Sierra Nevada snowpack and the Colorado River.

**Potential drought development:** The forecast La Niña may lead to the further development of drought conditions.

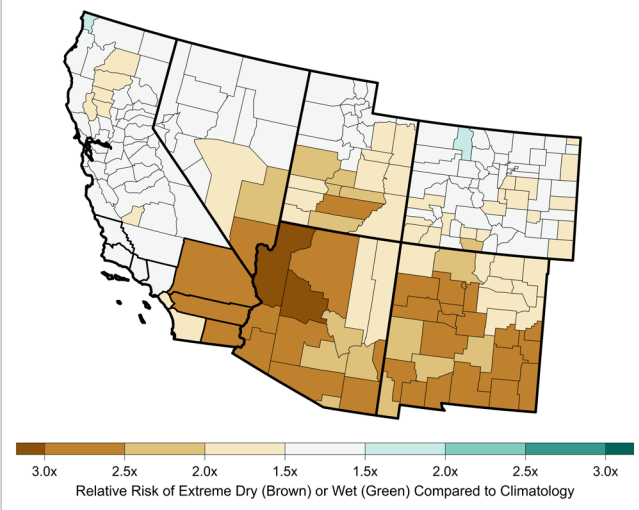
**Scalable:** Due to similar climates and water resource challenges, success in Southern California would support initial expansion into the Southwestern U.S.



## Drought Scenarios Are Sector Specific

**"An increased risk of drought due to extreme low precipitation in 2024-2025 will likely limit water available for irrigated and rainfed agriculture in Southern California."**

Relative Risk of Extreme Oct-Mar Precipitation Related to La Niña



Relative risk of extreme dry or wet October-March related to La Niña compared to conditions during 1940-2022. Extreme dry and wet are defined by the lowest and highest 20th percentile of October-March precipitation, respectively. Extreme dryness is due to a 20% decrease in the frequency of moisture-bearing storms off the coast of California. The nine Southern California counties included in this pilot are outlined in black. Source: NOAA Physical Sciences Laboratory

◀ U.S. Drought Monitor Category since 2000 by percent of land area in the nine Southern California counties included in this pilot. Source: NIDIS/[Drought.gov Historical Information](https://www.drought.gov/historical-information)

## Key Partners

